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3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the Academic year

2021-2022

S. No	TITLE	NAME OF FACULTY	DEPARTM ENT	JOURNAL NAME	Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	Formulation and Evaluation of Floating Tablets of Ranolazineusing Eudragit-E100 and Guar Gum	Dr. Seetha Devi A	PHARMAC EUTICS	International Journal of PharmTech Research, Vol.14 , No.01, pp 125-132	https://www.sphinxsai.com/2021/ph_vol14_no1/1/125-132)V14N1PT.pdf	https://sphinxsai.com/2021/ph_vol14_no1/1/125-132)V14N1PT.pdf	Google Scholar, Publons, UGC CARE
2	Characterization of Gums and Their Influence on the Phenomenon of Drug Release		PHARMAC EUTICS	Journal of Drug and Alcohol Research Vol. 10 (2021), Article ID 236148,	https://www.ashdin.com/	https://www.ashdin.com/articles/characterization-of-gums-and-their-influence-on-the-phenomenon-of-drug-release.pdf	SCOPUS INDEX, UGC CARE
3	Evaluation of the Acute Toxicity Study of Methanolic Leaf Extract of Gossypium Hirsutum in Albino Mice	M. Sri Rekha	PHARMAC EUTICS	Journal of Global Trends in Pharmaceutical Sciences, Vol.12, Issue.1,	https://www.jgtps.com/	https://www.jgtps.com/index.php?id=NDK	Index Copernicus, Google Scholar, UGC CARE



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Mr. Rajat Chaudhary

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18	Preparation and evaluation of polyherbal formulation for its hepatoprotective activity against ethanol mediated paracetamol induced intoxication rat model	PHARMACUTICAL CHEMISTRY	International Journal of Medicine and Pharmaceutical Research, Vol.9, Issue No.(1),page No.28-33	2321-2624	https://www.pharmaceuticalresearchlibrary.com/wp-content/uploads/2021/04/IJMPR4336.pdf	Google Scholar, UGC CARE
19	Synthesis, characterization and antibacterial activity of novel schiff bases of pyridin-3-yl-carbohydrazide derivatives	PHARMACUTICAL CHEMISTRY	Journal of Innovations in Applied Pharmaceutical Science, 6(2) 2021, 23-26	2455-5177	https://saap.org.in/journals/index.php/iaps/rnals/publication/354485700_Synthesis_characterization_and_antibacterial_activity_of_novel_schiff_bases_of_pyridine-3_yl_carbohydrazide_derivatives	CAS Source Index, Thomson Reuter, UGC CARE
20	Synthesis, Characterization and Anti-Microbial Activity of Novel Pyrimidine Derivatives	PHARMACUTICAL CHEMISTRY	Journal of Drug Delivery and Therapeutics, Volume 1.11, Issue (2-s), Page No.98-102	2250-1177	http://jddonline.info/index.php/jddt	UGC CARE, Elsevier's Database, Index Copernicus, CAB Abstracts



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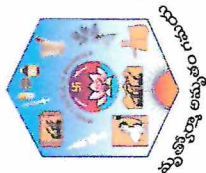
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7	Targeting of Anti Cancer Drugs Through Nanoparticles	PHARMAC EUTICS	World Journal of Pharmaceutical Research, SJIF Impact Factor 8.084, Vol.10, Issue.11.	2277-7105	https://www.wjpr.net/	https://wjpr.net/abstract/file/17513	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
8	A Review on Oral Disintegrating Tablets	PHARMAC EUTICS	World Journal of Pharmaceutical Research, SJIF Impact Factor 8.084, Vol. 10, Issue.11.	2277-7105	https://www.wjpr.net/	https://wjpr.s3.ap-south-1.amazonaws.com/article_issue/7c753d37f79f35fe020d91e75991aea8.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
9	Formulation and Evaluation of Stable Nanosuspension of Selective Poor Ly Solubledrug Ritonavir	P. Sreevidya	World Journal of Pharmaceutical Research, SJIF Impact Factor 8.084, Vol.10, Issue.14.	2277-7105	https://www.wjpr.net/	https://wjpr.net/public/abstract/file/18223	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
10	A Review of Niosomes as Novel Drug Delivery Systems	Vadithe Vasu Naik	International Journal of Pharmaceutical Sciences and Nanotechnology, Vol. 14, Issue 6, November - December 2021	0974 - 3278	https://ijpsnonline.com/index.php/ijpsn	https://ijpsnonline.com/index.php/ijpsn/article/view/2337	SCOPUS INDEX, UGC CARE



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11	A Review on Pharmacological Activities of Bauhinia Variegata and Bauhinia Purpurea	S. Udhayavani	PHARMACEUTICAL CHEMISTRY	World Journal of Pharmaceutical Research, Volume 10, Issue 1, 203-218	2277-7105	https://www.wjpr.net/	https://wjpr.s3.ap-south-1.amazonaws.com/article_issue/1609399370.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
12	Review on Synthetic Significance of Rhodanine Nucleus in Various Ailments		PHARMACEUTICAL CHEMISTRY	World Journal of Pharmaceutical Sciences, SJIF Impact Factor 7.632, Volume 10, Issue 7, 959-982	2278 - 4357	https://www.wjpps.com/	https://storage.googleapis.com/wjpps/article_issue/1625046234.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
13	Synthesis and evaluation of antimicrobial activity of new sulfonamide Schiff's base	Vijaya Lakshmi Nandikatti	PHARMACEUTICAL CHEMISTRY	International Journal of Scientific Development and Research, Volume 6 Issue 1	2455-2631	https://www.ijedr.org/	https://www.ijedr.org/papers/IJEDR2101012.pdf	UGC CARE, Index Copernicus International, DRJI, DocStoc



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14	Phytochemical Screening and Evaluation of Anti Microbial Activity of Methanolic Extract of Jasminum Multiflorum. J Flowers	PHYARMAC EUTICAL CHEMISTR Y	European Journal of Biomedical and Pharmaceutical sciences, Volume 8, Issue 3, 188-191, SJIF Impact Factor 6.044	2349-8870	https://www.ejbps.co.in/ejbps/index	https://storage.googleapis.com/journal-uploads/ejbps/article_issue/volume_8_march_issue_3/1620295411.pdf	UGC CARE, Directory of Research Journals Indexing, Cosmos Impact Factor
15	Scavenging Activity of Methanolic Extract of Flowers of Jasminum Multiflorum Linn	PHYARMAC EUTICAL CHEMISTR Y	European Journal of Biomedical and Pharmaceutical sciences, Volume: 8 Issue: 9 459-462	2349-8870	https://www.ejbps.co.in/	https://storage.googleapis.com/journal-uploads/ejbps/article_issue/volume_8_september_issue_9/1630404969.pdf	UGC CARE, Directory of Research Journals Indexing, Cosmos Impact Factor
16	Review on Jasminum Multiflorum	PHYARMAC EUTICAL CHEMISTR Y	European Journal of Pharmaceutical and Medical Research, 8(3), 220-222, SJIF Impact Factor 6.222	2394-3211	https://www.ejpmr.co.in/	https://storage.googleapis.com/journal-uploads/ejpmr/article_issue/1614598843.pdf	UGC CARE, Index Copernicus, Indian Science Publications, Directory of Research Journals Indexing
17	An over view of Rheumatoid arthritis	PHYARMAC EUTICAL CHEMISTR Y	World Journal of Pharmaceutical Sciences, Vol.9, Issue No.(2): P.108-116	2321-3086	https://www.wjpsonline.in.com/index.php/wjps/article/view/88/over-view-rheumatoid-arthritis	https://storage.googleapis.com/index.php/wjps/article/view/88/over-view-rheumatoid-arthritis	UGC CARE, Google Scholar, Chemical Abstracts Service, Cosmos Impact Factor



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24	A review study on the anti depressant and anti oxidant activities of pisidium guajava and allium sativum	PHARMAC EUTICAL CHEMISTR Y	Journal of Innovations in Applied Pharmaceutical Science,6(3) 2021, 27-30	2455- 5177	https://saap.org.in/journals/index.php/jiaps/	https://www.researchgate.net/publication/357545232_A_review_study_on_the_anti_depressant_and_anti_oxidant_activities_of_pisidium_guajava_and_allium_sativum	UGC CARE, CASSI, American Chemical Society, Thomson Reuter
25	Alternanthera sessilis: a Promising Relief From Stress	PHARMAC EUTICAL CHEMISTR Y	Indo American Journal of Pharmaceutical Research, Vol. 11, Issue 10, 2021.	2231- 6876	https://iajpr.com/	https://zenodo.org/record/5636100/files/210911%20READY.pdf?download=1	Index Copernicus , UGC CARE
26	Evaluation of anti-inflammatory activity and anti-oxidant potential of portulaca quadrifida linn.	PHARMAC EUTICAL CHEMISTR Y	Journal of Innovations in Applied Pharmaceutical Science,6(3) 2021, 58-65	2455- 5177	https://saap.org.in/journals/index.php/jiaps/	https://saap.org.in/journals/index.php/jiaps/article/download/255/289	UGC CARE, CAS Source Index, Thomson Reuter
27	Determination of elemental impurities of Arsenic, Cadmium, Mercury, Lead and Palladium content in Testosterone propionate by using ICP-MS	PHARMAC EUTICAL CHEMISTR Y	Asian Journal of Research in Chemistry, Vol. 14, Issue (3): May-June 2021	0974- 4169	https://ajrconline.org/Home.aspx	https://ajrconline.org/HTMLPaper.aspx?Journal=Asian%20Journal%20of%20Research%20in%20Chemistry;PID=2021-14-3-7	UGC CARE, CAB ABSTRACTS, EBSCO PUBLISHING'S ELECTRONIC DATABASES, PROQUEST CENTRAL



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28	Natural and Novel Peptides as Disease Curing Therapeutic Agents	R. Govindarajan	Pharmaceutical Chemistry	Journal of Pharma and Drug Regulatory Affairs, Volume-3, Issue-1 (January-April, 2021)	2582-3043	http://matjournals.in/index.php/JPDRA/index	http://matjournals.in/index.php/JPDRA/article/view/6279	Google Scholar, UGC CARE
29	Admet Prediction of Synthesized Tri-Peptide Derivatives by Using Swiss-Admet, Pkcsim Web Servers		Pharmaceutical Chemistry	World Journal Of Pharmacy and Pharmaceutical Sciences, Volume 10, Issue 12, 1403-1418	2278 - 4357	https://www.wjpps.com/	https://storage.googleapis.com/journal-uploads/wjpps/article_issue/1638264936.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
30	Development and Validation of Stability Indicating RP-HPLC Method for the Simultaneous Estimation of Daunorubicin And Cytarabine in Bulk and Pharmaceutical Dosage Forms	A. Suneetha	Pharmaceutical Analysis	World Journal of Advance Healthcare Research, Volume: 5. Issue: 1. Page No. 95-102	2457-0400	https://www.wjahr.com/	https://www.wjahr.com/admin/assets/article_issue/25122020/1609377544.pdf	UGC CARE, Index Copernicus, UDLedge Science Citation Index



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31	Development And Validation of TLC-Densitometric Method for Estimation of Flupirtine Maleate and its Formulations	PHARMACUTICAL ANALYSIS	International Journal of Pharmaceutics and research, Vol. 12(11): 5987-5991.	2320-5148	https://ijpsr.com/	https://ijpsr.com/?action=download_pdf&postid=79621	Scopus, Embase, UGC CARE
32	Development & Validation of RP- HPLC Method for the Estimation of Doravirine in Bulk and Pharmaceutical Dosage Form	PHARMACUTICAL ANALYSIS	Asian Journal of Research in Medical and Pharmaceutical Sciences, 10(4): 26-31, 2021	2457-0745	https://journalajrimps.com/index.php/AJRI-MPS/about	https://journalajrimps.com/index.php/AJRI-MPS/article/view/179/357	UGC CARE, Google Scholar, ACADEMIA, Scite Index
33	Method Development And Validation for the Simultaneous Estimation of Netarsudil and Latanoprost in Bulk and Ophthalmic Solutions	PHARMACUTICAL ANALYSIS	European Journal of Biomedical and Pharmaceutical sciences, Volume 8, Issue 12, 356-361.	2349-8870	https://www.ejbpps.com/ejbpps/index	https://storage.googleapis.com/journal-uploads/ejbpps/article_issue/volume_8_december_issue_12/1638526964.pdf	UGC CARE, Directory of Research Journals Indexing, Cosmos Impact Factor
34	Synthesis, Characterization, Biological Activity and Molecular Docking of Novel Isoxazole Chalcones	PHARMACUTICAL ANALYSIS	High Technology Letters, Volume 27, Issue 1,	1006-6748	https://gjstx-e.cn/	https://drive.google.com/file/d/1j4FQTFRmm7522snDBGCL7aiGESfIS3a/view	SCOPUS INDEX, UGC CARE



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35	Simultaneous Quantification of Sofosbuvir, Velpatasvir and Voxilaprevir by RP-UPLC in Pharmaceutical Dosage forms	PHARMAC EUTICAL ANALYSIS	High Technology Letters, Volume 27, Issue 1,	1006-6748	https://gistx-e.cn/	https://drive.google.com/file/d/1kQ_nhYhHxjyZrF7Tv38XnRARRH56aSVL/view	SCOPUS INDEX, UGC CARE
36	Method development and validation for estimation of ticagrelor in pharmaceutical dosage form by using RP-HPLC	PHARMAC EUTICAL ANALYSIS	International Journal of Advanced Research and Development, Volume 6; Issue 1, Page No. 38-42	2455-4030	https://www.multidisciplinaryjournal.net/	https://www.advancedjournal.com/download/2023/6-1-18-949.pdf	UGC CARE, Index Copernicus, RJI Factor, Citefactor
37	Method Development and Validation for Simultaneous Estimation of Ledipasvir and Sofosbuvir in Pharmaceutical Dosage Form by Using RP-HPLC	PHARMAC EUTICAL ANALYSIS	Journal of Hospital Pharmacy, 16(1) Jan. to March, 2021 (Feb. Supplement Issue-C) Page-24	2348-7704	https://journalofhospitalpharmacy.in/	https://journalofhospitalpharmacy.in/johp/admin/freePDF/636dbxm9vfbrs0apt60g.pdf	UGC CARE, Index Copernicus, Web of science Group



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38	Development and validation of stability indicating HPLC method for the estimation of etodolac in pharmaceutical dosage form	PHARMAC EUTICAL ANALYSIS	International Journal of Chemistry Studies, Volume 5, Issue 1, Page No. 05-10	2581-348X	http://www.chemistryjournal.in/	https://www.chemistryjournal.in/download/152/5-1-12-595.pdf	UGC CARE, Index Copernicus, RJI Factor, Citefactor, ROAD, Publons
39	Method development and validation for simultaneous estimation of brinzolamide and brimonidine in pharmaceutical dosage form by using RP-HPLC	PHARMAC EUTICAL ANALYSIS	International Journal of Chemical Research and Development, Volume- 3, Issue -1, Page No. 34-38	2664-6552	https://www.chemistryjournal.in/	https://www.chemistryjournal.in/archives/2021/vol3issue1/PartA/3-1-11-646.pdf	UGC CARE, RJI Factor, CiteFactor, Crossref
40	Validated Stability Indicating RP- HPLC Method for Simultaneous Determination of Lumacaftor and Ivacaftor in Pharmaceutical Formulations	PHARMAC EUTICAL ANALYSIS	European Journal of Pharmaceutical and Medical Research, 8(2), 519-526	2394-3211	https://www.ejpmr.com/home	https://storage.googleapis.com/journal-uploads/ejpmr/article_issue/1612315936.pdf	UGC CARE, Indian Science Publications, Index Copernicus, Scope Database



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41	Development and Validation of Novel RP-HPLC method for the estimation of Canagliflozin in bulk and pharmaceutical dosage forms	PHARMACEUTICAL ANALYSIS	International Journal for Research Trends and Innovation, Vol.-6, Issue -2	2456-3315	https://www.ijrti.org/	https://ijrti.org/papers/IJRTI2102007.pdf	UGC CARE, Thomson Reuters, Index Copernicus, Open J Gate, BASE
42	Method Development and Validation for Simultaneous Estimation of Metformin HCl and Myo-Inositol In Pharmaceutical Dosage form by using RP-HPLC	PHARMACEUTICAL ANALYSIS	World Journal of Advance Healthcare Research, Volume 5, Issue 3. 2021	2457-0400	https://www.wjahrc.com/	https://www.wjahrc.com/admin/assets/article_issue/27042021/16222442737.pdf	UGC CARE, Index Copernicus, UDLedge Science Citation Index
43	Method Development and Validation for the Estimation of Amifostine in Pharmaceutical Dosage form by using RP-HPLC	PHARMACEUTICAL ANALYSIS	International Journal of Research Publication and Reviews, Vol (2) Issue (3) Page 124-129	2582-7421	https://www.ijrpr.com/	https://www.ijrpr.com/uploads/V2/ISSUE3/IJRPR226.pdf	UGC CARE, iSSUU, IJI FACTOR INDEXING, SafetyLit



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44	Synthesis, Characterization, Anti-Mycobacterial Evaluation and In-Silico Molecular Docking of Novel Isoxazole Clubbed Pyrimidine Derivatives	PHARMACUTICAL ANALYSIS	Journal of Pharmaceutical Research International, Vol. 33, Issue No.(26B): 69-79,	2456-9119	https://journaljpri.com/index.php/JPRI/article/view/2306/4621	UGC CARE, Google Scholar, Semantic Scholar, ScienceOpen
45	Development and validation of RP- UPLC method for the simultaneous estimation of pregabalin and paliperidone in pharmaceutical dosage form	PHARMACUTICAL ANALYSIS	International Journal of Pharmaceutical Research and Development, Volume 8, Issue 9, Page No. 07-13	2349-5979	http://www.allsubjectjournal.com/download/5146/8-7-48-890.pdf	UGC CARE, Google Scholar, Index Copernicus, CiteFactor



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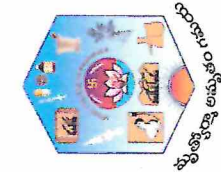
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48	Development and Validation of Gas Chromatographic Method for Estimation of Iso-Amyl-2, Cyanoacrylate in Pharmaceutical Dosage form	PHARMACEUTICAL ANALYSIS	International Journal of Research in Pharmacy and Chemistry, Vol. 11, Issue No.(4), 128-132	2231 - 2781	http://www.ijrpc.com/	https://www.ijrpc.com/files/12-10-2021/04.pdf	UGC CARE, Google Scholar, International Scientific Indexing, Directory of Science
49	Method Development and Validation for the Simultaneous Estimation of Doravirine, Lamivudine and Tenofovir Bulk and Pharmaceutical Dosage form	G. Indira Priyadarshini	International Journal of Pharmaceutical Research and Applications, Volume 6, Issue 5 Sep-Oct 2021, pp: 1272-1284	2249- 7781	https://www.ijprajournal.com/nal.com/	https://ijprajournal.com/issue dop/Method%20Development%20and%20Validation%20for%20the%20Simultaneous%20Estimation%20of%20Doravirine%20and%20Lamivudine%20and%20Tenofovir%20Bulk%20and%20Pharmaceutical%20Dosage form.pdf	Google Scholar, UGC CARE



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50	HPLC Method Development and Validation for the Simultaneous Estimation of Itraconazole and Terbinafine in Bulk and Pharmaceutical Dosage Form	PHARMACEUTICAL ANALYSIS	Indo American Journal of Pharmaceutical Sciences, Vol- 08, Issue- 11, 96-100	2349-7750	https://www.iajps.com/	https://zenodo.org/record/5687866/files/12.Indira%20Priyadarshini%20-HPLC%20METHOD%20-DEVELOPMENT%20AND%20VALIDATION%20FOR%20THE%20SIMULTANEOUS%20ESTIMATION%20OF%20ITRACONAZOLE%20AND%20TERBINAFINE%20IN%20BULK%20AND%20PHARMACEUTICAL%20DOSAGE%20FORM%20%281%29.pdf?download=1	Web of Science, UGC CARE
51	Stability indicating RP-HPLC method development and validation for the simultaneous determination of vilanterol trifluoroacetate and umeclidinium bromide in bulk and pharmaceutical dosage forms	PHARMACEUTICAL ANALYSIS	World Journal of Pharmaceutical Sciences, 9(2): 137-143	2321-3310	https://wjpsonline.com/index.php/wjps/wjps/article/view/92/simultaneous-determination-vilanterol-umeclidinium-rp-hplc	https://wjpsonline.com/index.php/wjps/article/view/92/simultaneous-determination-vilanterol-umeclidinium-rp-hplc	Google Scholar, UGC CARE



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52	Development and Validation of New RP-UPLC Method For Simultaneous Determination of Lamivudine and Dolutegravir in Combined Dosage Form	V. Mounika	PHARMACUTICAL ANALYSIS	International Journal of Research Publication and Reviews, Vol (2) Issue (3) 208-213.	2582-7421	https://www.ijrpr.com/ploads/V2ISSUE3/IJRPR242.pdf	UGC CARE, ISSUU, IJI FACTOR INDEXING, SafetyLit
53	Is Cannabissativa, The mind alteringnig htm are Plant of the world	R.K.Kudari	PHARMACUTICAL ANALYSIS	International Education and Research Journal, Volume : 7, Issue : 6, Jun 2021	2454-9916	https://www.iajps.com/pdf/moveu/52986584/IS_CANNABIS_SATIVA_THE_MIND_ALTERING_NIGHTMAR_E_PLANT_OF_THE_WORLD.pdf	Google Scholar, UGC CARE
54	A Review article on Current Research and Regulatory Steps for further Development of Clinical Trials in India	Y. Anil Kumar	PHARMACOLOGY	Indo American Journal of Pharmaceutical Sciences, SJIF Impact Factor: 7.187, Vol.7, Issue. 11, 89-94	2349-7750	https://iajps.com/pdf/moveu/52986584/IS_CANNABIS_SATIVA_THE_MIND_ALTERING_NIGHTMAR_E_PLANT_OF_THE_WORLD.pdf	Web of Science, UGC CARE



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55	A review study on the anti depressant and anti oxidant activities of pisidium guajava and allium sativum	PHARMAC OLOGY	Journal of Innovations in Applied Pharmaceutical Science, Vol.6, Issue.3, 27-30	2455-5177	https://saap.org.in/journals/index.php/jiaps/article/view/237/272	https://www.saap.org.in/journals/index.php/jiaps/article/view/237/272	UGC CARE, CAS Source Index, Thomson Reuter
56	Isolation and Evaluation of Anti- inflammatory activity of Epigallocatechin from Senegalia rugata along with PUFAs	PHARMAC OLOGY	Research Journal of Pharmacy and Technology, Vol. 14, Issue.11, November 2021	0974-3618	https://www.rjptonline.org/Home.aspx	https://www.rjptonline.org/HTMLPaper.aspx?Journal=Research+Journal+of+Pharmacy+and+Technology&PID%3d2021-14-11-23	UGC CARE, SCOPUS, GOOGLE SCHOLAR, INDIAN SCIENCE ABSTRACTS
57	Larvicidal activity of isolated fatty acids from Senegalia rugata pods	PHARMAC OLOGY	International Journal of Pharmaceutical Research, Jan - Mar, 2021, Vol.13, Issue.1.	0975-2366	http://www.ipronline.com/Default.aspx	http://www.ipronline.com/ViewArticleDetail.aspx?ID=19135	UGC CARE, EMBASE, INDIAN SCIENCE ABSTRACTS
58	A Review on Different Methods for Studying Depression in Rodents	PHARMAC OLOGY	International Journal of All Research Education and Scientific Methods, Vol. 9, Issue 9, September - 2021, Impact Factor: 7.429.	2455-6211	http://www.ijaresm.com/	http://www.ijaresm.com/uploaded_files/document_file/N_Tulasi_Uma_Rani_correctedEA7T.pdf	UGC CARE, Web of Science



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59	Current Scenario of Pharmacovigilance in India and its Comparison With U.S.A. and E.U.	MV. Nagabhu shanam	PHARMAC EUTICAL MANAGE MENT AND REGULAT ORY AFFAIRS	World Journal of Pharmaceutical Research, Vol.8, Issue.9.	2277-7105	https://www.wjpr.net/uploads/wjpr/article_issue/1567230392.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
60	Regulations and Registration Process of Medicinal Products and Medical Devices in CIS Countries		PHARMAC EUTICAL MANAGE MENT AND REGULAT ORY AFFAIRS	World Journal of Pharmaceutical Research, Vol. 10, Issue 13.	2277-7105	https://wjpr.s3.ap-south-1.amazonaws.com/article_issue/14df1fe175ff4759afa3177b0a6d3278.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
61	A Comparative Study on Regulatory Requirement for Registration of Medical Devices in US, Europe and Canada		PHARMAC EUTICAL MANAGE MENT AND REGULAT ORY AFFAIRS	World Journal of Pharmaceutical Research, Vol.10, Issue.13.	2277-7105	https://wjpr.net/abstract/file/17977	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database



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63	Regulatory considerations for emergency use authorizations of medical products U/S 564 of the federal food drug and cosmetic act, USA	Ramaiah Maddi	PHARMACEUTICAL MANAGEMENT AND REGULATORY AFFAIRS	World Journal of Current Medical And Pharmaceutical Research, Vol.3, Issue.5, 116-119	2582-0222	https://www.ijprajournal.com/index.php/wicmpr.com/index.php/journal/article/view/192/174	https://www.wicmpr.com/index.php/journal/article/view/192/174	UGC CARE, Google Scholar, Science Gate, Publons
64	Regulatory Requirements for Eu Medical Device Labeling – New Changes	Ramaiah Maddi	PHARMACEUTICAL MANAGEMENT AND REGULATORY AFFAIRS	Journal of Global Trends in Pharmaceutical Sciences Vol.12, Issue.3, 9874 - 9879	2230-7346	https://www.ijprajournal.com/index.php/wicmpr.com/index.php/journal/article/view/192/174	https://www.ijprajournal.com/index.php/wicmpr.com/index.php/journal/article/view/192/174	UGC CARE, Index Copernicus, Google Scholar



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65	Technical documentation requirements for medical devices approval in European Union and a detailed emphasis on air-way products	PHARMAC EUTICAL MANAGE MENT AND REGULAT ORY AFFAIRS	Journal of Innovations in Applied Pharmaceutical Science, Vol.6, Issue.3 , 48-53	2455- 5177	https://saap.org.in/journals/index.php/jiaps/article/view/244/281	UGC CARE, CAS Source Index, Thomson Reuter
66	Natural Antivirals for the Management of Sars-Covid-19: A Review	PHARMAC OGNOSY	International Journal of Research in Ayurveda and Pharmacy, 12 (3), 2021	2229- 3566	https://ijrap.net/index.php/login/index.php/uploads/2600_pdf.pdf	UGC CARE, IndexCopernicus , EMBASE, CABI, OpenJGate
67	Efficacy of Peri-Operative Administration of Prucalopride in Assessing Post-Operative Bowel Movements: A Prospective Comparative Study	P. Seethara maiah	World Journal of Pharmacy and Pharmaceutical Sciences, SJIF Impact Factor 7.632, Vol. 10, Issue.7, 2100- 2120	2278 - 4357	https://www.wjpps.com/journal-uploads/wjpps/article-iss ue/1625305404.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
68	Medical Expulsion Therapy	U. Sushitha	World Journal of Pharmacy and Pharmaceutical Sciences, SJIF Impact	2278 - 4357	https://www.wjpps.com/journal-uploads/wjpps/article-iss ue/1625479171.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications,



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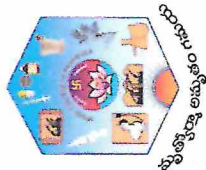
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69	Comparison of Effectiveness of Etodolac and Naproxen in the Treatment of Knee Osteoarthritis: A Randomized, Prospective, Open Label Parallel Study	Dr. Faizan Ali Shaik	PHARMACY PRACTICE	Factor 7.632, Vol. 10, Issue.7, 2135-2147 World Journal of Pharmacy and Pharmaceutical Sciences, SJIF Impact Factor 7.632, Vol.10, Issue.8, 1652-1675	2278 - 4357	https://www.wjpps.com/uploads/wjpps/article_issue/1627728543.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database
70	Comparative Evaluation of Efficacy of Hydroxychloroquine Versus Methotrexate in Patients With Rheumatoid Arthritis		PHARMACY PRACTICE	International Journal of Modern Pharmaceutical Research, SJIF Impact Factor: 5.273, Vol.5, Issue.4, 120-129	2319-5878	http://www.ijmpronline.com/download/article/469/1627635108.pdf	UGC CARE, Google Scholar, Scope Database, Cosmos Impact Factor
71	Determination of Safety and Efficacy of Harpagoside With Diclofenac in Post Operative Pain Management: A Prospective Comparative Study	G. Sadasiva Rao	PHARMACY PRACTICE	World Journal of Pharmacy and Pharmaceutical Sciences, SJIF Impact Factor 7.632, Vol.10, Issue.8, 1878-1889	2278 - 4357	https://www.wjpps.com/uploads/wjpps/article_issue/1627730636.pdf	UGC CARE, Google Scholar, Index Copernicus, Indian Science Publications, Scope Database



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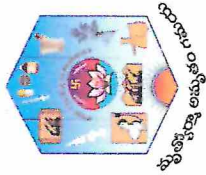
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72	Brief review on Remdesivir		PHARMACY PRACTICE	International Journal of Health Care and Biological Sciences, Vol. 2, Issue 3, 57-62	2582-7499	https://www.saap.org.in/journals/index.php/ijhcb/article/view/222/264	UGC CARE, Scilit, Mendeley
73	Preparation and Evaluation of Pancha Harithakadi Churna for Digestive Activity	S. Sarala	PHARMACOLOGY	International Research Journal of Pharmacy, Vol.1 2, Issue.4	2230 - 8407	http://www.irjponline.com/	UGC CARE, EMBASE, Google Scholar, SCIENCEGATE
74	Digestive Activity of Pancha Harithakadi Churna		PHARMACOLOGY	International Journal of Pharmaceutical Sciences Review and Research, Vol. 71, Issue.2, November - December 2021; Pages:159-164	0976 - 044X	https://www.globalresearchonline.net/	UGC CARE, Open-J-Gate, Google Scholar, Science central
75	Phytochemical Investigation and In Vivo Antiurolithiatic Activity of Merremia Emarginata (BURM.F.) Hallier F.	Neeraja Kamakshi U	PHARMACOLOGY	International Journal of Pharmaceutical Research and Applications, Vol. 6, Issue. 5, Sep-Oct 2021, pp: 257-263	2249-7781	https://www.ijprajournal.com/issue-dcp/Phytochemical%20Investigation%20and%20In%20Vivo%20Antiurolithiatic%20Activity%20of%20Merremia%20Emarginata%20(BURM.F.)%20Hallier%20F..pdf	UGC CARE, Google Scholar



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76	Phytochemical Screening and Antibacterial Activity of Grape Seed Extract	J. Siva Jyothi	PHARMAC EUTICAL BIOTECHN OLOGY	International Journal of Pharmaceutical Sciences Review and Research, 71(2), November - December 2021; Pages: 26-29	0976 - 044X	https://www.globalresearchonline.net/	https://www.researchgate.net/publication/3576663935_Phytochemical_Screening_and_Antibacterial_Activity_of_Grape_Seed_Extract/fulltext/61d8fffe669ee0f5c90fb12/Phytochemical-Screening-and-Antibacterial-Activity-of-Grape-Seed-Extract.pdf	UGC CARE, Open-J-Gate, Google Scholar, Science central
77	Screening, Isolation and Biochemical Characterization of Laccase Producing Bacteria from Contaminated Sites		PHARMAC EUTICAL BIOTECHN OLOGY	International Journal of Pharmaceutical Sciences Review and Research, 71(2), November - December 2021;Pages: 117-121	0976 - 044X	https://www.globalresearchonline.net/	https://www.researchgate.net/publication/3577773934_Screening_Isolation_and_Biochemical_Characterization_of_Laccase_Producing_Bacteria_from_Contaminated_Sites/fulltext/61ded1c63a192d2c8af7064c/Screening-Isolation-and-Biochemical-Characterization-of-Laccase-Producing-Bacteria-from-Contaminated-Sites.pdf	UGC CARE, Open-J-Gate, Google Scholar, Science central



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Formulation and Evaluation of Floating Tablets of Ranolazine using Eudragit-E100 and Guar Gum

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Abstract: The objective was to develop gastric floating drug delivery systems of ranolazine floating tablets by using various polymers like Eudragit E-100 and Guar Gum. In the present work attempts have been made to prepare ranolazine floating tablets by direct compression method by using sodium bicarbonate, avicel, magnesium stearate, Eudragit E-100 and Guar Gum. Formulations F₁- F₉ of floating tablets of Ranolazine were prepared using variable concentrations of Eudragit and Guar Gum. The prepared formulations were evaluated for various evaluation tests like thickness, hardness, weight variation, friability, drug content and uniformity. The buoyancy lag time and total floating time was studied for all the formulations. From all the formulations F₇ of sustained release tablets of Ranolazine containing a combination of both polymers was found to be optimized formulation for 12 hours release as it fulfilled all the requirements.

Keywords: Ranolazine, sustained release floating tablets, GFDDS, Eudragit E-100.

INTRODUCTION:

Gastroretentive drug delivery system (GRDDSs) can release the drug continuously for a prolonged period of time before it reaches its absorption site and improve the controlled delivery of drugs. The drugs that are absorbed from the proximal part of the gastro intestinal tract or those are less soluble in or are degraded by alkaline pH or they encounter at the lower part of the GIT can achieve therapeutic benefits of drug by prolonging the gastric retention of the drugs¹⁻³.

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Research Article

Characterization of Gums and Their Influence on the Phenomenon of Drug Release

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Abstract

The main concern of the present investigation is to provide new sustained release excipient which, when incorporated into a final product, produces controlled release of active ingredient over an extended period of 12hrs or more when the dosage form is exposed to G.I fluids in gastric environment. Many naturally available polymers were being investigated for their applications in the design of sustained drug delivery systems.

The natural polymers which were characterized in the present research work have showed good flow properties and suitable physico chemical properties like low moisture content which enables low chance of microbial growth, high swelling index indicates high swellability and good water retention capacity there by enhanced permeation of drug for longer periods of time. The gums exhibiting non-Newtonian plastic flow; this indicates the gelling behavior and confirms their suitability in the development of controlled release delivery systems.

FTIR and DSC studies were carried out for characterization of gums and results indicated that there was no change in the absorption spectra. The bacterial and fungal counts were within limits and pathogenic microorganisms were absent and acute toxicity studies indicated that these gums were safe to use.

Keywords: Physico-chemical Properties; Bhara gum; Grewia gum; Mucuna Gum; Rheological Properties

Introduction

Nature has provided a wide variety of materials to help mankind and improves the health of all living things either directly or indirectly. Excipients are the one which do not interfere with physical, chemical and pharmacological effects of the active ingredients but they assist in getting desired pharmacological effect from the dosage forms and helps in getting safe and effective dosage form suitable for administration to patients. The excipients are broadly classified in to three types, based on their nature of origin as natural, semi synthetic and synthetic.

These natural excipients have advantages over synthetic ones since they are chemically inert, nontoxic, less expensive, biodegradable and widely available. Natural excipients obtained from plants have diverse applications in drug delivery and they play different roles in dosage forms as binders, disintegrants, emulsifying agents and suspending

agents. Now a day's extensive studies are being conducted for finding the applicability of these natural excipients in the design of novel drug delivery systems [1-6].

Advantages of natural gums in pharmaceutical science

Naturally available biodegradable polymers are produced by all living organisms. All these plant materials are chemically carbohydrates composed of repeating sugar (mono-saccharide's) units. Hence, they are non-toxic. Production cost will be always less with that of natural polymers when compared to synthetic polymers. Environmental friendly processing, these natural gums were easily collected from different sources in various seasons in large quantities because their production and processing cost is very less.

Local availability is more in developing countries like India government promotes the production of plants like guar gum and tragacanth because they have wide applications in various industries. Better patient tolerance as well as public acceptance these natural polymers have less side effects when compared to synthetic one, for example, povidone. Most of these gums were obtained from edible sources.

Disadvantages of natural gums in pharmaceutical science

Originally these gums was carbohydrates and they contain 10% moisture content, during production they are exposed to external environmental conditions so there is a more risk of microbial contamination. It can be prevented by the addition of suitable preservatives. Batch to batch variation is very common problem with natural polymers because their production depends on seasonal factors. Uncontrolled rate of hydration is another drawback; it is due to differences in the collection of natural polymers at different times, as well as differences in region, species, and climate conditions resulting changes in the percentage of chemical constituents.

Generally these gums show high viscosity when they come in contact with water due to complex formation of gums.



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EVALUATION OF THE ACUTE TOXICITY STUDY OF METHANOLIC LEAF EXTRACT OF GOSSYPIUM HIRSUTUM IN ALBINO MICE

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ABSTRACT

The present study was carried out to evaluate the acute oral toxicity of methanol extract of *Gossypium hirsutum* leaves in male albino mice. For the acute toxicity study, mice were orally administered single dose of 100, 500, 1000 mg/kg bw methanol extract of *G. hirsutum* and observed for behavioral changes and mortality, if any. During 14 days of study mice were observed daily for any change in their body weight, food and water consumption. At the end of 14 days mice sacrificed for hematological and biochemical analyses. The extract at highest dose of 1000 mg/kg bw did not produce mortality in any of tested animals during study period. Therefore, the LD₅₀ of this plant was estimated to be more than 1000 mg/kg bw. Hematology reveals that the extract has hemolytic activity. Liver and Kidney functions were assessed by determining serum parameters like creatinine, transeaminase bilirubin, and urea. All these parameters were significantly abnormal and indicate liver and kidney dysfunctioning. The results of the study showed that the extract was categorized as *slightly toxic* and provides valuable data on the toxicity profile of plant.

INTRODUCTION

Plants and herbs have been used since ancient times to cure various ailments. By the middle of the nineteenth century, approximately 80% of all medicines were derived from herbs [1]. Herbal medicine (or) phytomedicine is recognized as the most common form of alternative medicine [2]. The world health organization (WHO) estimates that 80% of the world's population relies on these "alternative" plant based medicines especially in the developing and in the developed countries where modern medicines are predominantly used [3, 4&5]. Over the years, the use of herbs in the treatment of illnesses has been very successful and its historic usage has been useful in drug discovery development [6, 7].

Herbal remedies are considered safer and less damaging to the human body than synthetic drugs [8]. However, the lack of standardization has been a major concern regarding use of herbal medicines [9, 10]. Although herbal supplements may be considered to be safe, some are known to be toxic at high doses and others may have potentially adverse effect after prolonged use [11]. *Gossypium hirsutum* also known as upland cotton (or) Mexican cotton belongs to the family malvaceae [12]. It is the most widely planted species of cotton on the United States and is native to Central America. *Gossypium hirsutum* was named due to hairiness. *G. hirsutum* used by the traditional medicinal practitioners in the treatment of diseases such as yellow fever, influenza [13].

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Review Article

BIOADHESIVE DRUG DELIVERY SYSTEM-A REVIEW

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Abstract:

Mucoadhesive drug delivery system are delivery system which utilized the property of the polymers which become adhesive on hydration and hence can be used for targeting a drug to a particular region of the body for extended period of time. Bio adhesion is an interfacial phenomenon in which to materials, at least one of which is biological, are held together with the interfacial forces. The attachment could be between an artificial material and biological substrate, such adhesion between polymer and a biological membrane. In case of polymer attached to the mucin layer of a mucosal tissue, the term mucoadhesion is used. The mucosal layer lines a number of regions of the body including the gastro intestinal tract, the urogenital tract, the airways, the ear, nose and eye. These represent potential sites for attachment of any bio adhesive system and hence, the mucoadhesive drug delivery system includes, buccal, oral, rectal, nasal and ocular delivery systems.

Key words: Bio adhesive drug delivery system (BADDs), Mucin, Bio adhesion, Mucoadhesion.**Corresponding author:**Yerragopu Naga Surekha,
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Review Article

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PRONIOSOME: A NOVEL APPROACH TO VESICULAR DRUG DELIVERY SYSTEM

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ABSTRACT

The present article depicts an elaborative study of proniosomes as specialized drug delivery system. Proniosomes are dry formulation of water-soluble carrier particles that are coated with surfactant and can be measured out as needed and dehydrated to form niosomal dispersion immediately before use on brief agitation in hot aqueous media within minutes. Provesicular systems, such as proniosomes which is one of the advancement in nanotechnology minimize problems of vesicular systems such as aggregation, fusion and leakage of drug and provide additional convenience in transportation, distribution, storage and dosing. Conventional vesicular systems such as liposomes and niosomes are particulate in nature and face stability related difficulty. The review article provides an insight about these approaches along with a novel vesicular approach known as proniosomes. This new

emerging concept has demonstrated the potential in improving the oral bioavailability, targeting drugs to the specific site and also permeation of drugs across the stratum corneum. It prolongs the existence of the drug in systemic circulation and finally reduces the toxicity. The goal of this study is to introduce and explore proniosomes as a carrier system for various pharmaceutical and cosmeceutical applications.

KEYWORDS: Niosomes, Proniosomes, Surfactant, Stability, Colloidal particulate carriers.

INTRODUCTION

Vesicular systems have been receiving a lot of interest as a carrier for advanced drug delivery. Encapsulation of the drug in vesicular structures is one such system, which can be

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Research Article

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FORMULATION AND EVALUATION OF ORAL DISINTEGRATING TABLETS OF ZINGIBER OFFICINALE

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ABSTRACT

Oral dissolving drug delivery system offers a solution for those patients having difficulty in swallowing. *Zingiber officinale*, has been used for medicinal purpose since antiquity to treat motion sickness, pregnancy, and cancer-chemotherapy-induced vomiting, mild stomach upset, cough, chronic bronchial problems, and low-grade infections of all kinds and anorexia condition. This work investigates the possibility of developing *Zingiber officinale* oral disintegrating tablets allowing fast, reproducible dissolution in oral cavity; thus bypassing first pass metabolism. The oral disintegrating tablets were prepared by Direct Compression method. Prepared tablets were evaluated for Pre and Post Compressional parameters like flow properties, hardness, Friability, Disintegration studies, Dissolution studies, accelerated stability studies. The different excipients such as Lactose Anhydrous, MCC PH-102, Pregelatinized Starch, Croscarmellose Sodium, Sodium

Starch Glycolate, CrossPovidone, Sodium Sacharin, Aerosil, Magnesium Stearate were explored individually and in combination with each other for the formation of tablets. Among all the formulations the wetting time and disintegration time both are less for the formulation containing croscarmellose sodium (8%w/w) as super disintegrant (F6). The dissolution rate of the optimized formulations (F6) was found to be higher when compared to other formulations. Among the all the formulation F6 was found to be promising ODT formulation.

KEYWORDS: *Zingiber officinale*, Oral dissolving drug delivery systems, Oral Disintegrating Tablets (ODTs), Direct Compression method.

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Review Article

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TARGETING OF ANTI CANCER DRUGS THROUGH NANOPARTICLES

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ABSTRACT

Prior studies suggested that nano particle drug delivery might improve the therapeutic response to anticancer drugs and allow the simultaneous monitoring of drug uptake by tumours. Cancer nano therapeutics are rapidly progressing and are being implemented to solve several limitations of conventional drug delivery systems such as nonspecific bio distribution and targeting, lack of water solubility, poor oral bioavailability, and low therapeutic indices. To improve the bio distribution of cancer drugs, nano particles have been designed for optimal size and surface characteristics to increase their circulation time in the bloodstream. They are also able to carry their loaded active drugs to cancer cells by selectively using the unique pathophysiology of tumours, such as their enhanced permeability and retention effect and the tumor microenvironment. In addition to this passive targeting mechanism, active targeting strategies using ligands

or antibodies directed against selected tumor targets amplify the specificity of these therapeutic nano particles. Drug resistance, another obstacle that impedes the efficacy of both molecularly targeted and conventional chemotherapeutic agents, might also be overcome, or at least reduced, using nano particles. Nano particles have the ability to accumulate in cells without being recognized by P-glycoprotein, one of the main mediators of multidrug resistance, resulting in the increased intracellular concentration of drugs. Multifunctional and multiplex nano particles are now being actively investigated and are on the horizon as the next generation of nano particles, facilitating personalized and tailored cancer treatment. Targeting methotrexate increased its antitumor activity and markedly decreased its toxicity, allowing therapeutic responses not possible with a free drug.

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Research Article

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FORMULATION AND EVALUATION OF STABLE NANOSUSPENSION OF SELECTIVE POORLY SOLUBLE DRUG RITONAVIR

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ABSTRACT

Introduction: In recent decades, nanoparticle engineering has been developed and investigated for pharmaceutical applications.^[1] The use of nanotechnology can solve the problems associated with the various approaches described previously. Nanotechnology is the scientific and engineering practice at the nanoscale, which is 10⁻⁹ m. Nanosuspensions are colloidal dispersions of nano-sized drug particles stabilised by surfactants.^[2] Nanosuspensions are dispersed nanoparticles of a poorly water-soluble drug in absence of a matrix.^[3] These are useful for increasing the solubility of drugs that are difficult to dissolve in either water or lipids. By increasing the solubility of the active compound, the rate of flooding increases, and the maximum

plasma level is reached more rapidly. The production of Nanosuspensions has been commercialized through methods such as media milling and high-pressure homogenization.^[4] Ritonavir is a commonly used antiretroviral agent, which is used in the treatment of HIV-viral proteinase enzyme. Ritonavir is a BCS class II and IV drug. It prevents the cleavage of the gag-pol polypeptide, resulting in noninfectious, immature viral particles. It has very low bioavailability of not more than 5% due to its limited solubility in biological fluids. Due to its dissolution as well as permeability, Ritonavir is classified as a class II compound under Biopharmaceutical Classification (BCS). It is possible to improve therapeutic efficacy by improving aqueous solubility in such cases. The in vitro and in vivo performance of PEG-amorphous Ritonavir solid dispersions was evaluated with different levels of drug loading.

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A Review of Niosomes as Novel Drug Delivery Systems

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ABSTRACT

The aim of this review is to present the structure of niosome, benefits and drawbacks, fundamentals of niosome preparation and characterization as well as a description of their applications in drug delivery. This review will provide an overview on the increasing interest on niosomes in the field of drug delivery. Drug delivery systems are defined as formulations aiming for transportation of a drug to the desired area of action within the body. The basic component of drug delivery systems is an appropriate carrier that protects the drug from rapid degradation or clearance and thereby enhances drug concentration in target tissues. Drug targeting is a kind of phenomenon in which drug gets

distributed in the body in such a manner that the drug interacts with the target tissue at a cellular or subcellular level to achieve a desired therapeutic response at a desired site without undesirable interactions at other sites. This can be achieved by modern methods of targeting the drug delivery system such as niosomes. Niosomes are the type of non-ionic surfactant vesicles, which are biodegradable, non-toxic, more stable and inexpensive, a new approach to liposomes. Their structure similar to liposome and hence they can represent alternative vesicular systems with respect to liposomes. The niosomes have the tendency to load different type of drugs.

KEYWORDS: Niosomes, Structure of niosomes, Preparation, Different types, Characterization, Applications.

Introduction

A niosome is a non-ionic surfactant-based vesicle. Niosomes are formed mostly by non-ionic surfactant and cholesterol incorporation as an excipient, other excipients can also be used (Moghaseemi et al., 2014a). Niosomes have more penetrating capability than the previous preparations of emulsions (Chen et al., 2012). They are structurally similar to liposomes in having a bilayer, however, the materials used to prepare niosomes make them more stable. It can entrap both hydrophilic and lipophilic drugs, either in an aqueous layer or in a vesicular membrane made of lipid material (Azeem et al., 2008). The non-ionic surfactants form a closed bilayer vesicle in aqueous media based on its amphiphilic nature using some energy for instance heat, physical agitation to form this structure. In the bilayer structure, hydrophobic parts are oriented away from the aqueous solvent, whereas the hydrophilic heads remain in contact with the aqueous solvent. The properties of the vesicles can be changed by varying the composition of the vesicles, size, lamellarity, tapped volume, surface charge and concentration. Various forces act inside the vesicle, eg. van der Waals forces among surfactant molecules, repulsive forces emerging from the electrostatic interactions among charged groups of surfactant molecules, entropic repulsive forces of the head groups of surfactants, short-acting repulsive forces, etc. These forces are responsible for maintaining the vesicular structure of niosomes. But the stability of niosomes is

affected by type of surfactant, nature of encapsulated drug, storage temperature, detergents, use of membrane spanning lipids, the interfacial polymerization of surfactant monomers *in situ*, inclusion of charged molecule. Due to presence of hydrophilic, amphiphilic, and lipophilic moieties in the structure, these can accommodate drug molecules with a wide range of solubility (Udupu et al., 2002). Niosomes are much more stable during the process of formulation and storage, as compared to liposomes. Niosomes may resolve the issues of insolubility, volatility, poor bioavailability, and rapid drug degradation (Mishra et al., 2021).

Delivering drug with a controlled rate and targeted delivery received much attention in recent years. The application of nanotechnology to medicine has provided the development of multifunctional nanoparticles that, acting as drug carriers, can be loaded with different drugs (Salehi, 2016). The concept of a drug delivery system refers to a process of administering pharmaceutical compounds at a predetermined rate to achieve a therapeutic effect in humans or animals at a diseased site, and at the same time, reducing the concentration of the medication in surrounding tissues. Localized drug action enhances the efficacy of drug and reduces systemic toxic effects to tissues. Since then, a number of drug carrier systems have emerged, including immuno- globulins, serum proteins, synthetic polymers, liposomes, microspheres, and niosomes (Allen TM, 1998). Niosomes are biodegradable, biocompatible, and nonimmunogenic, they have long shelf life, exhibit high

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Review Article

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A REVIEW ON PHARMACOLOGICAL ACTIVITIES OF BAUHINIA VARIEGATA AND BAUHINIA PURPUREAE

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ABSTRACT

The use of natural products as medicinal agents presumably predates the earliest recorded history. *Bauhinia purpurea* species of flowering plants is used in several traditional medicine systems to cure various diseases. These plant species has been known to possess antibacterial, antidiabetic, analgesic, anti-inflammatory, anti-diarrheal, anticancerous, nephroprotective and thyroid hormone regulating activity. A wide range of chemical compounds including bioflavonoid, bibenzyls, dibenzoxepins, mixture of phytol fatty esters, lutein, β -sitosterol, isoquercetin and astragalin etc. The present review discusses phyto-chemistry, pharmacology, medicinal properties and biological activity of *Bauhinia variagata* and *Bauhinia purpurea* and its usage in

different ailments.

KEYWORDS: *Bauhinia variagata*, *Bauhinia purpurea*, accepted species for medicinal uses, phytochemical, pharmacological activities.

I. INTRODUCTION

Bauhinia^[1] is a large genus of flowering plants in the subfamily Cercidoideae^[2] and tribe Bauhinieae^[3] in the large flowering plant family Fabaceae, with a pantropical distribution. The genus was named after the Bauhin brothers Gaspard and Johann, Swiss-French botanists.



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Review Article

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REVIEW ON SYNTHETIC SIGNIFICANCE OF RHODANINE NUCLEUS IN VARIOUS AILMENTS

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ABSTRACT

An overview article described the study of 4-thiazolidinones particularly rhodanine ring and different systems for its reactions which fused the change of the ring and activities. Rhodanine is a 5-membered heterocyclic natural compound having a thiazolidine center. Furthermore, the reactivity of rhodanine ring which helped in the mix of different arylidenes at position 5 and carboxylic acids at position 3. The most responsive situations in 4-thiazolidinone are 3 and 5, which choose the significant headings of heterocycle change. Approaches to manage the association of 3,5-disubstituted 4-thiazolidinones in general join two pathways. Initially all the synthesis of 3,5-disubstituted 4-thiazolidinones by different reactions in position 3 of the thiazolidinone cycle. The second was the mix of 3,5-di substituted 4-thiazolidinones by various reactions in position 5 of the thiazolidinone

cycle modification of 4-thiazolidinone cycle on positions 2, 3, 4 or 5 was productive to achieve made things with a wide scope of pharmacological development. Currently 4-thiazolidinones were considered as another class of antidiabetic (insulin sharpening) drugs and extreme aldose reductase inhibitors, which have the potential for the treatment of diabetes challenges (cataract, nephropathy, neuropathy).

KEYWORDS: Rhodanine, 4-thiazolidine, Arylidenes.

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Synthesis and evaluation of antimicrobial activity of new sulfonamide Schiff's base

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Abstract: Synthetic chemistry is the most frequently used in the preparation of organic compounds from smaller entities. The process of establishing a new drug exceedingly complexed involves the talents of people from a variety of disciplines, including chemistry, biochemistry, physiology, pharmacology, pharmaceuticals and medicine. On through literature survey we found that the Schiff base containing sulphonamide compound having wide range of pharmacological and biological actions, reported that the Schiff base containing sulphonamide compounds having various variety of pharmacological and microbial actions. In our present work we are planning to synthesis some of the Schiff base containing sulphonamides by using different aromatic aldehydes, to obtain pharmacologically or biologically useful compounds. The synthesised compounds were subjected to in-vitro anti-microbial evaluation. The zone of inhibition at various concentrations of synthesised compounds against gram positive bacteria were determined by disc diffusion method.

Index Terms: Sulphonamides, Schiff's base, disc diffusion method, antibacterial activity

I. INTRODUCTION

The synthetic and medicinal chemistry is concerned mainly with the organic, analytical and biological aspects of this process. It occupies a strategic position at the interface of chemistry and biology. Together computer aided drug design (CADD), x-ray crystallography, metabolism and pharmacokinetics, legal and regulating affairs, clinical franchise management, and pharmaceuticals and process research chemistry uses sophisticated analytical techniques to synthesis and test new drug products and to develop the most effective and environmentally friendly means of production. The sulphonamide antimicrobial drugs were the first effective chemotherapeutic agents that could be used systemically for the cure of bacterial infections in humans. Structural similarity between sulphonamide and PABA is the basis for the inhibitory activity of sulfa drugs on dihydrofolate biosynthesis. The sulphonamides are having pharmacological activities like Anti-inflammatory bowel diseases, Antimicrobial, Intestinal infections, Ulcerative colitis, Haemophilus vaginalis, Local management of ophthalmic infections and Anti-tumour activity. Schiff's base is a compound, considered a sub-class of imines, being either secondary ketimines or secondary aldimines depending on their structure. It is also known as Hugo (Ugo) Schiff base and synonymous with azomethine. Schiff's bases can be synthesised from a reaction of an aromatic amine and a carbonyl compound by a nucleophilic addition forming a hemiaminal followed by a dehydration to generate an imine. These are having antimicrobial, antiviral and anticancer activity. After observing number of literature, it is found that sulphonamide having more importance to treat the bacterial infections. Based on this present work is designed to synthesise sulphonamide with Schiff's base and evaluated their anti-microbial activity.

II. METHODOLOGY

Synthesis of Sulphonamide containing Schiff's base derivatives:

Step - 1: Preparation of P-Acetamido benzene sulfonyl chloride

In a fume cupboard 10gms of acetamide was placed in 250ml round bottomed flask fitted with a dropping funnel containing 25ml of chlorosulfonic acid. The acid was added drop by drop with constant stirring after that it was subjected to reflux for 1 hour and then the reaction mixture was cooled and poured into 150ml of ice cold water with stirring, para-acetamido benzene sulfonyl chloride was precipitated and filtered in a Buncher funnel with solution. The residue was washed with ice cold water about 9gms of product was used for next step.

Step-2: Preparation of para-acetamido benzene sulfanilamide

To the entire para-acetamido benzene sulfonyl chloride obtained in the 1st step 35ml of liquid ammonia and 35ml of water were added in a 250ml of round bottomed flask in a fume cupboard. The contents were mixed by shaking and the mixture was heated just below the B.P. for 15min and the flask was cooled in the ice bath and the reaction mixture was filtered in a buncher funnel with suction washed with water. Dried well in an oven at 100°C the yield of p-acetamido benzene sulfanilamide was noted.

Step-3: Preparation of sulphanilamide

In a 250ml round bottomed flask 6gms of p-acetamido benzene sulphanilamide, 10ml of dil.HCl & 10ml of water were taken, reflux condenser was fixed & boiled under reflux for 40-50 min until solid was separated on cooling. The solution was decolourised by adding 1gm of animal charcoal & boiled & then it is immediately filtered to the filtrate 6gms of NaHCO₃ was added slowly in





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PHYTOCHEMICAL SCREENING AND EVALUATION OF ANTI MICROBIAL ACTIVITY OF METHANOLIC EXTRACT OF *JASMINUM MULTIFLORUM* L FLOWERS

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ABSTRACT

Jasminum multiflorum is an ornamental flowering shrub, used as a traditional medicine. Mostly leaves, roots, flowers and fruits are used to maintain health and also treat fever, cough, indolent ulcer, and abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, urinary inflammation, other infections and blood shot eyes. The flowers of *Jasminum multiflorum* are having different therapeutic activities like Vasodilatation, Cardio tropic, Analgesic, Suppression of Lactation and Anti-oxidant. It is also noticed that there was a report on Anti-bacterial activity of flower. So, present paper is aimed to carry out phytochemical screening and Anti-bacterial activity of methanolic extract of flower of *Jasminum multiflorum*. The Methanolic extract was allowed for phytochemical screening and it shows the presence of Proteins, Carbohydrates, Aminoacids, Alkaloids, Glycosides, terpenoids, Steroids, Saponins and Phenols, which was confirmed by the I.R spectrum. The Methanolic extract was tested for its anti bacterial activity on *Bacillus subtilis* by using Cup-plate method. It shown good anti bacterial activity when compare with standard streptomycin.

KEYWORDS: Downy jasmine, Anti bacterial, *Jasminum multiflorum*, Methanolic extract.

INTRODUCTION

In modern world, the synthetic drugs are readily available and more effective in curing numerous diseases. Even though, there some are people who still prefer using traditional folk medicines, because of their less harmful effects due to non-toxic in nature and easy availability at reasonable price. Natural products have a unique chemical diversity, which results in diversity in their biological activities. This is because of their well organized three dimensional chemical and steric properties. In the mean time the utility of natural products as biological function modifiers has also won considerable attention. Subsequently, they have been successfully employed in the discovery of new drugs. Therefore researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs. In the present research paper we evaluated the anti bacterial activity of Methanolic extract of flowers of *Jasminum multiflorum*.

Jasminum multiflorum (J.M) is a species of jasmine commonly known as Indian jasmine, star jasmine^[1], Winter jasmine and Downy jasmine. It is an ornamental flowering shrub native to India and South - East Asia. In ancient age, people used local flora and

fauna as a traditional medicine for their survival. Mostly leaves, roots, flowers and fruits are used as traditional medicines to maintain health and also treat fever, cough, indolent ulcer, abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, inflamed and blood shot eyes etc.

Particularly flowers are used as beverage, lactifuge, emetic, cardiac tonic, an aphrodisiac, a sedative, an antiseptic, antidepressant, antispasmodic, to increase immunity, to treat conjunctivitis and analgesic & headache. These are used to relieving stress and anxiety, to treat heat stroke or sunstroke, cuts and scrapes (which hastens the wound healing process), urinary inflammation and other infections such as sun burn and rashes.

Flowers are having different types of phyto chemicals like alkaloids, flavonoids, terpenoids, tannins, emodin, leucoantho cyanins, steroids, coumarins, phlobatanins, and saponins.^[2] The active ingredients present in the flowers are Secoiridoids^[3], lactones, jasmolactone^[4] A, B, C and D which contain novel bicyclic-2-oxo-oxepano [4, 5-c] pyraning system. It also containing 2-

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SCAVENGING ACTIVITY OF METHANOLIC EXTRACT OF FLOWERS OF JASMINUM MULTIFLORUM LINN

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ABSTRACT

Jasminum multiflorum Linn is an ornamental flowering shrub, used as a traditional medicine. Mostly leaves, roots, flowers and fruits are used to maintain health and also treat fever, cough, indolent ulcer, and abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, urinary inflammation, other infections and blood shot eyes. The flowers of *Jasminum multiflorum* Linn are having different therapeutic activities like Vasodilatation, Cardiotropic, Analgesic, Suppression of Lactation and Anti-oxidant. It is also noticed that there was a report on Anti-bacterial activity of flower. So, present paper is aimed to carry out to test the Antioxidant property of methanolic extract of flower of *Jasminum multiflorum* Linn. The Methanolic extract was tested for its antioxidant activity by using Hydrogen peroxide scavenging (H_2O_2) Assay method. It shown good anti oxidant activity when compare with the standard Ascorbic acid.

KEYWORDS: Hydrogenperoxide, Anti oxidant, *Jasminum multiflorum*, Methanolic extract.

INTRODUCTION

In modern world, the synthetic drugs are readily available and more effective in curing numerous diseases. Even though, there are some people who still prefer using traditional folk medicines, because of their less harmful effects due to non-toxic in nature and easy availability at reasonable price. Natural products have a unique chemical diversity, which results in diversity in their biological activities. This is because of their well organized three dimensional chemical and steric properties. In the mean time the utility of natural products as biological function modifiers has also won considerable attention. Subsequently, they have been successfully employed in the discovery of new drugs. Therefore researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs. In the present research paper we evaluated the anti oxidant activity of Methanolic extract of flowers of *Jasminum multiflorum*.

Jasminum multiflorum (J.M) is a species of jasmine commonly known as Indian jasmine, star jasmine, Winter jasmine and Downy jasmine. It is an ornamental flowering shrub native to India and South - East Asia. In ancient age, people used local flora and fauna as a traditional medicine for their survival. Mostly leaves, roots, flowers and fruits are used as traditional medicines to maintain health and also treat fever, cough, indolent

ulcer, abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, inflamed and blood shot eyes etc.

Particularly flowers are used as beverage, lactifuge, emetic, cardiac tonic, an aphrodisiac, a sedative, an antiseptic, antidepressant, antispasmodic, to increase immunity, to treat conjunctivitis and analgesic & headache. Flowers are having different types of phytochemicals like alkaloids, flavonoids, terpenoids, tannins, emodin, leucoanthocyanins, steroids, coumarins, phlobatamins, and saponins. The active ingredients present in the flowers are Secoiridoid, lactones, jasmolactone A, B, C and D which contain novel bicyclic-2-oxo-oxepano [4, 5-c] pyran ring system. It also contains 2-acetoxyphephenylethanol, n-tritetracontane, heptacosane, jasmultiside and multifloroside, multiflorine.

Human beings are exposed to H_2O_2 indirectly via the environment nearly about 0.28 mg/kg/day with intake mostly from leaf crops Hydrogen peroxide may enter into the human body through inhalation of vapor or mist and through eye or skin contact. H_2O_2 is rapidly decomposed into oxygen and water and this may produce hydroxyl radicals (-OH) that can initiate lipid peroxidation and cause DNA damage in the body.



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Review Article
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REVIEW ON JASMINUM MULTIFLOURAM

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ABSTRACT

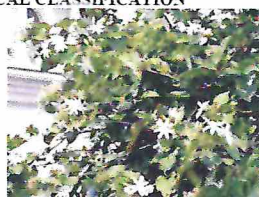
Jasminum multiflorum is an ornamental flowering shrub, used local flora and fauna as a traditional medicine for their survival. Mostly leaves, roots, flowers and fruits are used as traditional medicines to maintain health and also treat fever, cough, indolent ulcer, abdominal distention, diarrhoea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, inflamed and blood shot eyes. In modern world, the synthetic drugs are readily available and more effective in curing numerous diseases; there are people who still prefer using traditional folk medicines, because of their less harmful effects due to non-toxic in nature and easy availability at reasonable price. Therefore researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs.

INTRODUCTION

Jasminum multiflorum (JM) is a species of jasmine commonly known as Indian jasmine, star jasmine^[1], Winter jasmine and Downy jasmine. It is an ornamental

flowering shrub native to India and South east Asia. In ancient age, people used local flora and fauna as a traditional medicine for their survival.

TOXONOMICAL CLASSIFICATION

*Jasminum multiflorum* whole plant.*Jasminum multiflorum* Flowers.

Synonyms

Nyctanthes multiflora (basionyus), *Jasminum congestum* (downy hairs cover the deep green, oval leaves. Blooming occur throughout much of the year, as long as growing conditions are favorable, though in its native range, flowering is heaviest from fall to spring. The clusters of staminate, tubular, white flowers have a mild, sweet jasmine fragrance.

SCIENTIFIC CLASSIFICATION^[2]

Kingdom: Plantae
Order: Lamiales
Family: Oleaceae
Genus: *Jasminum*
Species: *J. multiflorum*

PHYSICAL CHARECTERISTICS

Jasminum multiflorum is an evergreen shrub with scrambling stems up to 16.4 feet (5 m) long that can

twine into the surrounding vegetation for support. Soft, downy hairs cover the deep green, oval leaves. Blooming occur throughout much of the year, as long as growing conditions are favorable, though in its native range, flowering is heaviest from fall to spring. The clusters of staminate, tubular, white flowers have a mild, sweet jasmine fragrance.

Plants are producing good source of secondary metabolites such as phenolic compounds, nitrogen containing compounds, vitamins and minerals. These compounds have antidiabetic, antitumor, antimicrobial, antioxidant, anti-acne activity etc. In India, traditional medicines are used for preparation of various cosmetics, colours and beautification.

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Review Article



An over view of rheumatoid arthritis

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ABSTRACT

Rheumatoid Arthritis (RA) is an autoimmune disease (the body's immune system attacks its own tissue, including joints) over longer periods of time, can cause bone erosion and joint deformity. RA occurs in about 5 per 1000 people. At present any patients with clinical synovitis in at least one joint may have definite RA, requiring aggressive treatment if it is untreated or unaddressed it leads to complications such as permanent joint damage requiring arthroplasty, rheumatoid vasculitis, and syndrome requiring splenectomy. Here, we present brief summary of the treatment modalities to address the complications associated with Rheumatoid Arthritis.

Keywords: Rheumatoid Arthritis; Splenectomy; Arthroplasty

INTRODUCTION

Rheumatoid Arthritis (RA) is a chronic systemic autoimmune mostly seen in the females than the males, and frequently observed in the elderly. RA primarily affects the lining of the synovial joints and can cause progressive disability, premature death and socioeconomic burdens. Early diagnosis is considered as the key improvement index for most desirable outcomes such as reduced joint destruction, less radiologic progression no function disability, and disease modifying

anti rheumatic drugs (DMARD) free remission. The treatment and outcome of RA influenced by the actions like the willingness of patients to seek medical advice, patient awareness of RA, the time for the patients from symptom onset to receiving appropriate treatment, the diagnostic capability of the physician to measure the disease activity. There are many composite scales such as the disease activity score using 28 joints (DAS - 28), Simplified Disease Activity Assessment Index (SDAI), and Clinical Disease Assessment Index (CDAI). Currently,

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Preparation and evaluation of polyherbal formulation for its hepatoprotective activity against ethanol mediated paracetamol induced intoxication rat model

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ABSTRACT

Objective: The present work was executed to evaluate the hepatoprotective potency of a polyherbal preparation. The objective of this study is to induce experimental hepatotoxicity using ethanol mediated paracetamol in normal Albino wistar rats and study the hepatoprotective activity of polyherbal formulation by comparison of changes in levels of liver parameters between normal and hepatic intoxication rats. **Methods:** The effect of methanol extract of poly herbal preparation containing Pods of *Moringa oleifera*, Fruits of *Piper Longum* and Seeds of *Hordeum Vulgare* was investigated in ethanol mediated paracetamol induced intoxication rat model. **Results:** Ethanol mediated Paracetamol administration caused severe hepatic damage in rats as evidenced by elevated serum aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP) and total bilirubin levels and cholesterol. The selected hepatic parameters after the oral administration of 150 and 300 mg/kg b. w of poly herbal formulation was significantly lower the blood glucose levels. **Conclusions:** The display of synergy or antagonism by the composite herbal extracts in ameliorating liver toxicity depended on the type and number of individual herbal extract used in constituting the experimental herbal formulations.

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CONTENTS

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1. Introduction

Liver is the largest not only in organ size but also in functions. Liver has more than 500 separate functions including synthesis, secretes, excretes, stores, generates,

metabolises, protects and detoxicates various substances, etc. Any type of injury (due to systemic drugs, food preservatives, agrochemicals and addiction to alcohol) or

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**Synthesis, characterization and anti-bacterial activity of novel schiff bases of pyridin-3 yl-carbohydrazide derivatives**

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**Keywords:** Heterocyclic compounds, Schiff base, spectrum of biological activity.**Abstract**

Heterocyclic compounds are cyclic compounds containing carbon and other heteroatoms. The most common heteroatoms are oxygen, nitrogen, and Sulphur. A heterocyclic compound is a cyclic compound that has atoms at least two different elements as members of its ring. A Schiff base (azomethine) is named after its inventor, Hugo Schiff and it is a functional group that contains a carbon-nitrogen double bond with the nitrogen atom connected to an aryl or alkyl group but not hydrogen. Schiff bases of Pyridin-3 yl-carbohydrazide derivatives from ethyl nicotinate and different aromatic aldehydes. Schiff's bases are aromatic substituted imine compounds. These compounds are very important in the medicinal and pharmaceutical fields because of their wide spectrum of biological activity. Schiff's bases show antibacterial activity, antifungal activity, and also antitumor activity. Aromatic aldehydes were refluxed with ethyl nicotinate using ethanol as a solvent to form Schiff's bases. All chemicals are taken in equimolar concentrations. The synthesized compounds were characterized by melting point, solubility, percentage yield, TLC, and IR spectral analysis. All derivatives are evaluated for anti-bacterial activity by the cup plate method. The antibacterial activity of test compounds was compared against standard Streptomycin. The 5 synthesized compounds show moderate antimicrobial activity. The experimental work summarizes the synthesis and in-vitro antibacterial activity of Schiff base derivatives.

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Production and Hosted by

www.saap.org.in**Introduction**

Heterocyclic compounds are cyclic compounds containing carbon and other hetero atoms. The most common hetero atoms are oxygen, nitrogen and sulphur. A heterocyclic compound is a cyclic compound that has atoms at least two different elements as members of its ring. In Greek hetero

means different. More than half of the known organic compounds are heterocyclic compounds. Heterocyclic compounds are those where one or more atom(s) of the ring are hetero atoms, for example, N, O, S, P, As, Se, B, and so on (Greek word "hetero means different") [1-3]. More than half of the known organic compounds are heterocyclic compounds. A Schiff base (azomethine) is named after its inventor, Hugo Schiff and it is a functional group that contains a carbon-nitrogen double bond with the nitrogen atom connected to an aryl or alkyl group but not hydrogen. Schiff bases have the general formula of $R_1R_2C=NR_3$, where R_3 is an aryl or alkyl group that makes the Schiff base a stable imine. Schiff bases can be synthesized from a reaction of an aromatic amine and a carbonyl compound by a nucleophilic addition forming a hemiaminal, followed by dehydration to generate an imine. They can be considered a sub-class of imines, being either secondary ketimines or secondary aldimines depending on their structure. The term



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Research Paper

Synthesis, Characterization and Anti-Microbial Activity of Novel Pyrimidine Derivatives

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Abstract

Pyrimidine is a heterocyclic aromatic organic compound similar to benzene and pyridine, containing two nitrogen atoms at positions 1 and 3 of the six member ring. Three nucleobases found in nucleic acids, cytosine (C), thymine (T), and uracil (U), are pyrimidine derivatives. A pyrimidine has many properties in common with pyridine, as the number of nitrogen atoms in the ring increases the ring pi electrons become less energetic and electrophilic aromatic substitution gets more difficult while nucleophilic aromatic substitution gets easier. Chalcones react with azobenzonidine to give intermediate compounds which on further reacts with substituted ketones to give Pyrimidine derivatives. A total of 6 compounds were synthesized from one scheme and they were recrystallized by appropriate solvents. They were identified and characterized by various spectral methods. In the present study, all synthesized compounds tested for anti bacterial activity and anti-fungal activity. They shown significant activity when compared with standard drug Streptomycin and Miconazole respectively.

Keywords: Pyrimidines, Characterization, Streptomycin, Miconazole, Anti-microbial activity.

INTRODUCTION

Pyrimidine is a heterocyclic aromatic organic compound similar to benzene and pyridine, containing two nitrogen atoms at positions 1 and 3 of the six-member ring.¹ Three nucleobases found in nucleic acids, cytosine (C), thymine (T), and uracil (U), are pyrimidine derivatives. A pyrimidine has many properties in common with pyridine,² as the number of nitrogen atoms in the ring increases the ring pi electrons become less energetic and electrophilic aromatic substitution gets more difficult while nucleophilic aromatic substitution gets easier.³⁻⁴ Reduction in resonance stabilization of pyrimidines may lead to addition and ring cleavage reactions rather than substitutions.⁵⁻⁶ Pyrimidine derivatives possess very interesting pharmacological and biological properties and are reported to exhibit variety of biological activities like antibacterial, antifungal and

anticonvulsant, analgesic, anti-inflammatory, antihelminthic, sedative, hypnotic, antispasmodic,⁷⁻¹⁰ local anaesthetic Antitubercular, antihistaminic, antioxidant and anticancer activity.¹¹⁻¹⁴

MATERIALS AND METHODS

Melting points of the synthesized compounds were determined in open capillary tubes and were uncorrected. IR spectra were recorded on BRUKER FT-IR spectrometer using ATR. ¹H NMR spectra of the compounds in deuteriated dimethyl sulfoxide and CDCl₃ was recorded on Bruker Av 400 spectrometer. Mass spectra were recorded on LCMS QP 5000 Shimadzu. Thin layer Chromatography was performed using pre-coated aluminium plates, coated with silica gel GF₂₅₄ [E. Merck]. Ethyl acetate: Methanol in the ratio of 3:2 was used as the eluent. The spots were visualized in the UV/Iodine chamber.

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Review Article

Review On Chemistry, Synthesis And Various Biological Activities Of Substituted Azetidinones

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ARTICLE INFO

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Keywords:

 β -lactam, Synthesis, schiff's bases, Azetidinones, biological activity.

ABSTRACT

Heterocyclic compounds have attracted considerable attention in the design of biologically active molecules and advanced organic materials. The chemistry of β -lactams has taken an prestigious place in organic and medicinal chemistry to the review on recent methods in the synthesis of substituted Azetidinone derivatives rendered as a lead molecule for designing potential bioactive agents and it accompanying additional various synthetic information and its orientations would encompass great deal of help to researchers, chemists and pharmacologists to make it the best, most productive, economical and medicinal important compounds which will be expected to show potent pharmacological activities. In future it would be useful to design different new drugs to bring in the market by using rapid, operationally simple, efficient and green procedure. This has led to

the discovery of a wide variety of compounds that are of high interest from the point of view antibacterial, anti-inflammatory, antihyperlipidemic, CNS activity, anticancer, antimicrobial, pesticidal, cytotoxic, antidiabetic, antitumor, antifungal, antitubercular activities.

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AN OVERVIEW ON CHEMISTRY AND VARIOUS BIOLOGICAL ACTIVITIES ON MESOIONIC CHALCONES

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ABSTRACT

Privileged structures have been widely used as an effective template in medicinal chemistry for drug discovery. Chalcone is a common simple scaffold found in many naturally occurring compounds. Many chalcone derivatives have also been prepared due to their convenient synthesis. These natural products and synthetic compounds have shown numerous interesting biological activities with clinical potentials against various diseases. This review aims to highlight the recent evidence of chalcone as a privileged scaffold in medicinal chemistry. These chalcone derivatives have shown important antimicrobial, antifungal, anti-mycobacterial, antimalarial, antiviral, anti-inflammatory, antioxidant, antileishmanial. This review highlights the synthesis and pharmacological properties of chalcone derivatives.

INTRODUCTION

The framework 1,3-diphenylprop-2-en-1-one in Fig.1 is well known by the generic term chalcone a name coined by Kostanecki and Tambor.^[1] It is also known as benzalacetophenone and benzylidene acetophenone. Chalcones belong to the flavonoid family.^[2-4] These open-chain flavonoids have two aromatic rings that are linked by an aliphatic three-carbon chain. The versatile molecule chalcone is an α,β -unsaturated ketone that contains the reactive keto-ethylenic group $-\text{CO}-\text{CH}=\text{CH}-$, a chromophore responsible for the color in chalcone compounds depending on the presence of other auxochromes.

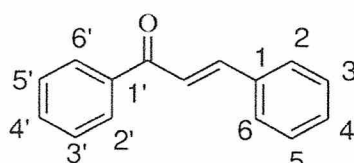


Fig. 1: 1,3-diphenylprop-2-en-1-one.

Chalcone has conjugated double bonds with absolute delocalization and two aromatic rings that possess a π -electron system, which gives them relatively low redox potential and a greater chance of undergoing electron transfer reactions. Chalcones are naturally abundant in edible plants,^[5] including vegetables, fruits, spices, tea and natural foodstuffs. Chalcones can be designed as precursors for flavonoids and isoflavonoids.^[6] They act as

synthons by which a range of analogs and novel heterocycles with pharmaceutical structures can be targeted.^[7-9]

Various chalcone derivatives show antimicrobial, antifungal, antimalarial, antiviral, anti-inflammatory, antileishmanial anti-tumor and anticancer properties.^[10-16] The α,β -unsaturated carbonyl system in chalcones makes them biologically active^[10] and exclusion of the carbonyl system makes them biologically inactive, ensuring stability in both cis and trans forms. (Fig. 2).

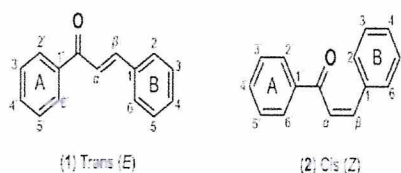


Fig. 2: Structural and numerical representations of chalcone scaffold.

Despite medicinal applications of chalcones, their wide bioactivity spectrum indicates a potentially promiscuous target profile, which presents a challenge for clinical development. This is largely attributable to the electrophilic nature of the α,β -unsaturated carbonyl system. This moiety is capable of forming irreversible bonds with biological macromolecules, resulting in a number of toxic effects, such as allergic reactions, carcinogenicity, and mutagenicity.^[11] On the other hand,





A review study on the anti depressant and anti oxidant activities of *pisidium guajava* and *allium sativum*

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Keywords: depression, anxiety, stress, herbal medicines, neurochemical transmission.

Abstract

When stress affects the body it interferes with physiological functions of the body and other normal functions such as physical and emotional behaviors of the individual and this is associated with the cause of depression, anxiety mental disorders. Here comes the cause of irrational responses of the body system. The different forms of irrational response are the symptoms for depression. Severe depression with significant effect on day to day life is considered as disability. There are so many synthetic medicines that are used to treat depressions they are playing a prominent role in this civilized world with so many adverse effects, in the other hand natural/ herbal medicines are also playing a crucial role with minimum to zero side effects. One of the main causes of depression is oxidative stress, which is a type of imbalance between the production of reactive oxygen species and the anti-oxidant defensive system.

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Introduction

Depression is a life-threatening illness that affects a large number of people. Mood swings, hallucinations, suicidal thoughts, anxiety, and other depravative states of mind, as well as some psychological imbalances, are all caused by changes in chemical mediators in the brain, as well as some biological inheritance. Currently, 35% of the world's population suffers from depression. It is thought to be the leading cause of death, particularly among teenagers. Internal stresses, fluctuations in serum levels of cholesterol, triglycerides, sugar, and coagulation factors are

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some of the internal causes linked to depression. Tricyclic antidepressants, lithium salts, serotonin inhibitors, and monoamine oxidase inhibitors are some of the synthetic drugs used to treat depression these days. However, they can cause sleeplessness, dry mouth, constipation, tachycardia, tremors, sedation, insomnia, serotonin syndrome, anxiety, diaphoresis, postural hypotension, blurred vision, Parkinson, and other side effects. The pioneering study of Otto Loewi and other scientists, namely, that chemical transmission is the primary way by which nerves interact with one another, was one of the most significant discoveries in neuroscience. Today, it is widely accepted that pre- and postsynaptic events are tightly regulated and serve as the foundation for central nervous system plasticity and learning (CNS). Chemical transmission necessitates several steps, including neurotransmitter synthesis, storage in secretory vesicles, and regulated release into the synaptic cleft between pre- and postsynaptic neurons, as well as the termination of neurotransmitter action and induction of final cellular responses via various



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ALTERNANTHERASESSILIS: A PROMISING RELIEF FROM STRESS

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Adaptogens,
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Reactive Oxygen Species.

ABSTRACT

According to various studies, stress is the major problem for many dangerous diseases ranging from psychiatric disorders to endocrine disorders including diabetes mellitus, hypothyroidism, peptic ulcers, male sexual dysfunction, ulcerative colitis, hypertension etc. Today's lifestyle was very frustrated due to busy schedule of even school going child up to old aged people. That is the reason medication identified with pressure and psychosis has a tremendous market on the planet. Usage of modern medicine has some benefits & results but they are mixed and unsatisfactory. Recent studies shows that the ayurvedic herbs having adaptogens which could induce the state of non-specific increase in resistance to affect internal homeostasis. The adaptogens improves the stress response and helps the body to adopt by normalizing physiological processes in times of increased stress. *Alternanthera sessilis* is one of the best phytomedicine for anti-stress activity. It is commonly known as sessile joy weed. Imbalance between the reactive oxygen species (ROS) leads to the generation of oxidative stress in our body. The anti-oxidant nature of this plant shows a promising relief from all kinds of stress. The anti-stress activity of ethanolic extract of *Alternanthera sessilis* was evaluated by using in vivo methods like forced swim test (FST), Tail suspension test (TST), Open field test (OFT), Learned vulnerability test, Gastric ulceration test. Conclusion- This study shows promising relief from stress due to the anti-oxidant nature of *Alternanthera sessilis*.

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Evaluation of anti-inflammatory activity and anti-oxidant potential of portulaca quadrifida linn.

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Keywords: *Portulaca quadrifida* Linn. Mice, anti-inflammatory activity, Diclofenac.

Abstract

Portulaca quadrifida L. (PQ) having the phytochemicals like Alkaloids, flavonoids, Saponins, tannins, glycosides, carbohydrates, aminoacids, triterpenoids. The present study was performed to evaluate the antioxidant and anti-inflammatory activities by using acetic acid induced vascular permeability model in mice & acetic acid induced colitis in rats significantly. PQ (100 mg/kg, p.o.) presented a significant anti-inflammatory activity towards acetic acid induced vascular permeability model in mice in comparison to Diclofenac sodium (10 mg/kg, s.c.) and acetic acid induced colitis in rats in comparison to 5-ASA. Our findings suggest that, PQ contains potential antioxidant and anti-inflammatory compounds which will aid us to conduct bioactivity guided isolation & characterization of leading compounds in due course.

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Introduction

Plants are one of the most important sources of medicine. Today the large number of drugs in use is derived from plants, such as morphine from *Papaver somniferum*, Atwagandha from *Withaniasomnifera*, Ephedrine from *Ephedra vulgaris*, Atropine from *Atropa belladonna*, Reserpine from *Rauwolfia serpentina* etc. The medicinal plants are rich in secondary metabolites (which are potential sources of drugs) and essential oils of therapeutic importance. The important advantages claimed for therapeutic uses of medicinal plants in various ailments are because of their safety, besides being economical, effective and their easy availability. Because of these advantages the medicinal plants have been widely used by the traditional medical practitioners in their day today practice. Plants have been used for health and medicinal purpose since thousand

years. They are one of the rich and important sources of medicine since human civilization. Now a day, it is preferred to use plant based medicines over synthetic medication for the treatment of different diseases because of their safety and cost effectiveness. Herbal medicines are particularly used by traditional practitioners since ancient times, inspite of their poor scientific data. Moreover continuous exposure to stressful conditions generates free radicals, which may over power the inbuilt protective mechanisms and cause tissue damage. These are reports that plants possessing free radical scavenging activity are known to have organ protective effect. Many scientists are reported that, flowers and green leaves of the plant are useful as medicines [1, 2]. Natural antioxidants present in the plants scavenge harmful free radicals from our body. Free radical reactions have been implicated in the pathology of numerous diseases [3]. It is possible to reduce the risk of chronic diseases & prevent disease progression by either enhancing the body's natural antioxidant defences or by supplementing with proven dietary antioxidants [4]. Synthetic antioxidants like ascorbic acid, butylhydroxyanisole (BHA) and butylhydroxytoluene (BHT) are commonly used in foods have their potential health risks & toxicity. Thus the need for alternative sources of antioxidant is paramount & the search for natural



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RESEARCH ARTICLE

Determination of elemental impurities of Arsenic, Cadmium, Mercury, Lead and Palladium content in Testosterone propionate by using ICP-MS

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ABSTRACT:

The aim of the present work is to develop and establish a validated analytical method for the determination of arsenic, cadmium, mercury, lead and palladium content in testosterone propionate by using inductive coupled plasma mass spectroscopy (ICP-MS). Samples were analyzed after a preparation of sample solution by dissolving in suitable solvents of concentrated nitric acid and concentrated hydrochloric acid. In the present method, RF power of 1550 watts, RF matching is 1.80 V, nebulizer flow of 0.10 rps and plasma view at spectrum mode were used. Octopole conditions are He flow is on, He flow rate is 4.3 mL/min and energy discrimination is 3.0 V were used. Significant savings in sample volumes, reagents, analysis cost and time are realized. Arsenic, cadmium, mercury, lead and palladium are primary concerned due to their high toxicity and potential contaminants should be limited in testosterone propionate and the developed method was validated according to ICH and USP guidelines. The correlation coefficient, recovery rate, LOD and LOQ reached the acceptable limits. The validated method was selective, sensitive, rapid and capable of the determination of elemental impurities of arsenic, cadmium, mercury, lead and palladium content in bulk drugs.

KEYWORDS: Impurities, Elemental analysis, Testosterone, Plasma, Octopole.

INTRODUCTION:

Testosterone is one of the important male gonadal hormones and is essential for the development of male sex organs and secondary sexual characteristics in men. Low level of Testosterone in serum occurs due to inadequate function of testis which results in male hypogonadism^{1,2}. The symptom of hypogonadism includes erectile dysfunction, decrease bone density, decrease volume of ejaculate and increase body fat³⁻⁵.

Various analytical techniques were design for the estimation of inorganic metal impurities include titration, ion-exchange chromatography, capillary electrophoresis and spectroscopic techniques like flame photometry, fluorimetry, atomic absorption spectroscopy and inductive coupled plasma. Among the above-mentioned techniques, inductive coupled plasma is an important tool for the detection and quantification of elements in accurate manner and it works on the basis of atomic spectrometry. Inductive coupled plasma also further includes 2 types which are ICP-optical emission spectroscopy and ICP-mass spectroscopy. Inductively coupled plasma mass spectrometry (ICP-MS) is a robust and widely used technique for multi-elemental and isotopic analysis of environmental materials that has shown clear advantages when compared with other analytical techniques such as inductively coupled plasma atomic emission spectrometry (ICP-AES), flame atomic absorption spectrometry (F-AAS), and electro thermal

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Natural and Novel Peptides as Disease Curing Therapeutic Agents

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ABSTRACT

In living organisms Peptides binds to specific receptors located on the cell surface and induces a series of signals, neurotransmissions or the release of growth factors. After 1960s there is a rapid increase in usage of peptides as therapeutic agents. Peptides are using widely in medicine and biotechnology, and therapeutic peptide research. Prokaryotes, plants, animals produce host defence peptides which are highly useful in drug development. Plant peptides have chemical constitutions of proteins, stability like organic molecules which are useful to treat cancer cells, HIV. Bacteria, Animal kingdom containing living organisms like reptiles, amphibians, arachnids, fishes, mammals, molluscs and insects produce mixture of peptides as a defencing mechanism which are now using as therapeutic agents. Enzymes can be used as peptide activators, peptide inhibitors to treat certain diseases like cancer, Alzheimer's diseases, stroke, arthritis and pulmonary diseases. The degradation of peptides drugs can be overcome by modifying the peptides structure to limit their mechanism. Peptide drug delivery to target plays a major role in treating the diseases by administering through different kind of routes of administration. Peptides can be used as tumour-targeting agents because of their smaller size, they can more easily penetrate solid tumours. Peptides are now available in oral drug delivery has long been a challenging interest. Peptides and related compounds would revolutionize the therapeutic treatment of many diseases. The pioneering approach to the synthesis of peptides on chips was published by Fodor which is based on photolithography.

Keywords— antimicrobial, antifungal, peptides, source, therapeutic use

INTRODUCTION

Peptides act as main agents in all most all biological mechanisms. They can act as enzymes, receptors, mediators of cell signalling, and structural cell components in biological systems. Till now, three different types of molecules have been developed as drugs for the treatment of human diseases such as: small molecules, proteins, and peptides [1,2].

The development of new peptide drugs include: progress in instrumental technologies for chemical peptide synthesis, which are possible to make peptides permeable to cells, target tissues. Construction of peptide libraries of linear and macrocyclic peptides along with unnatural amino acids, linkers of high chemical diversity [1,2]. Development of high-throughput methods for peptide selection which are the great progress of technologies for drug delivery.

Limits of peptides can be identified, which might have accounted for their delay as potential drugs with respect to small molecules. Few important drawbacks of peptides are limits for oral delivery, being degraded by digestive enzymes. Peptides are not able to cross the blood-brain barrier [1]. A peptide drug may be enzymes, which can activate peptide substrates and peptide inhibitors thus used in therapeutic purposes. In the market up to now only synthetic peptide inhibitors are comparatively little more available than synthetic peptide activators. The peptide inhibitors are using by researchers to probe the enzyme active site by knowing the flexibility, charge distribution and topology of individual drugs. The rennin inhibitors along



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Research Article

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ADMET PREDICTION OF SYNTHESIZED TRI-PEPTIDE DERIVATIVES BY USING SWISS-ADMET, PKCSM WEB SERVERS

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ABSTRACT

In silico approaches offer an expense and time-successful way to deal with quickly screen and enhance pharmacokinetic and toxic properties. Here we show the utilization of the thorough examination by using Swissadme, pkCSM, to permit early recognizable proof of possible issues, prioritization of hits, and enhancement of leads. A critical factor for the endorsement and achievement of any medication is the way it acts in the body. Many medications, notwithstanding, don't arrive at the market because of helpless adequacy or unsuitable incidental effects. Think about these right off the bat in the medication improvement process, both in the prioritization of expected hits, and enhancement of lead compounds.

KEYWORDS: Drug development, ADMET predictions, Pharmacokinetics, Toxicity.

INTRODUCTION^[1-7]

Computer Aided Drug Design [CADD] is an advanced computational method utilized in the medication revelation interaction to distinguish and foster a possible lead. CADD helped drug configuration incorporates computational science, sub-atomic demonstrating, sub-atomic plan and sane medication plan. CADD is being utilized to improve recognized leads. CADD methods are acquiring notoriety and appreciation in both scholarly circles just as in drug ventures. CADD approach saves time; it is quick and savvy. CADD approach can be used in 4 stages:

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DEVELOPMENT AND VALIDATION OF STABILITY INDICATING RP-HPLC
METHOD FOR THE SIMULTANEOUS ESTIMATION OF DAUNORUBICIN AND
CYTARABINE IN BULK AND PHARMACEUTICAL DOSAGE FORMS

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ABSTRACT

This present work describes a new validated Reverse Phase High Performance Liquid Chromatography (HPLC) method for the simultaneous determination of anti-cancer drugs, Daunorubicin and Cytarabine. A simultaneous determination method saves cost and time as both drugs can be injected into a single HPLC system without the need to change or re-equilibrate with a new mobile phase. The objective of the study is to develop a simultaneous estimation of two anti-cancer drugs in Pharmaceutical Dosage forms. The mobile phase consists of a mixture (50:50 v/v) of 0.1% Octane sulphonic acid: acetonitrile at a flow rate of 1 ml/min, with a PDA detector at 238 nm. Separation was achieved on a Xbridge C18 (150 x 4.6mm) maintained at 30°C temperature in a column oven. The method was linear between 22µg/ml – 110µg/ml for Daunorubicin and 50µg/ml – 250µg/ml for Cytarabine. The limit of detection was 2.98µg/ml for Daunorubicin, and 3.00µg/ml for Cytarabine and the limit of quantification was 10.00µg/mL for Daunorubicin and 9.98µg/mL for Cytarabine. The developed RP-HPLC method achieved good precision and accuracy. The developed and validated method was suitable to be used for routine analysis of Daunorubicin and Cytarabine.

KEYWORDS: Daunorubicin, Cytarabine, RP-HPLC, ICH-guidelines, Method development and Validation.

INTRODUCTION

Daunorubicin is also known as Daunomycin, is a chemotherapy medication used to treat cancer (Fig.1). Specifically, it is used for acute myeloid leukemia (AML), acute lymphocytic leukemia (ALL), chronic myelogenous leukemia (CML), and Kaposi's sarcoma. It is used by injection into a vein. Cytarabine (cytosine arabinoside, 1-b-D-arabinofuranosyl cytosine, ara-C) is a pyrimidine nucleoside analog which is predominantly used against acute myelogenous leukemia and non-Hodgkin's lymphoma (Fig. 2).

Daunorubicin and Cytarabine (I.V injection) is a liposomal combination of that is FDA approved for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia (t-AML) or AML with myelodysplasia-related changes (AML-MRC).⁽¹⁻³⁾

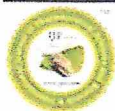
Daunorubicin interacts with DNA by intercalation and inhibition of macromolecular biosynthesis. This inhibits

the progression of the enzyme topoisomerase II, which relaxes supercoils in DNA for transcription. Daunorubicin stabilizes the topoisomerase II complex after it has broken the DNA chain for replication, preventing the DNA double helix from being resealed and thereby stopping the process of replication. Cytarabine is a cell cycle phase-specific anti-neoplastic agent, affecting cells only during the S-phase of cell division. Cytarabine acts primarily through inhibition of DNA polymerase.

Literature review reveals estimation of by RP-HPLC,^[4-6] and by Spectroscopy method,^[7] individually. In combination, Daunorubicin and Cytarabine only one method was published,^[8] but yet there is a need to develop new stability indicating RP-HPLC method with more sensitivity, accuracy and precision.

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DEVELOPMENT AND VALIDATION OF TLC-DENSITOMETRIC METHOD FOR ESTIMATION OF FLUPIRTINE MALEATE AND ITS FORMULATIONS

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Keywords:

Flupirtine Maleate,
Spectrophotometry, ICH, HPTLC,
Capsules

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ABSTRACT: A simple, precise, accurate, and reliable high-performance thin-layer chromatographic method has been developed and validated for the analysis of flupirtine maleate in capsule dosage form. Identification and analysis were performed on 10 cm × 10 cm layer thickness 0.2 mm, precoated silica gel G60-F254 aluminum sheet, prewashed with methanol, and dried in an oven at 50 °C for 5 min. Ethyl acetate: Chloroform (60 : 40) (v/v) was used as mobile phase. A calibration plot was established, showing the dependence of response (peak area) on the amount chromatographed. The validated calibration range was found to be 50-400 ng/spot and for flupirtine maleate with correlation coefficient (r^2) 0.999. The average % recovery was between 99.85-100.25%. The limit of detection and limit of quantification for flupirtine maleate were found to be 7.17 and 21.7 ng/spot, respectively. The spots were scanned with a densitometer at λ_{max} 326nm in a reflectance mode. In this method, the drug was achieved R_f value of 0.46±0.02. The proposed method was validated as per ICH guidelines and successfully applied to the estimation of flupirtine maleate in various pharmaceutical dosage forms.

INTRODUCTION: Flupirtine maleate (FPM) is a pyridine derivative with the chemical name of N-[2-Amino-6-[[[4-(fluorophenyl) methyl] amino]-3-pyridinyl] carbamic Acid Ethyl Ester (2Z)-2-Butenedioate; 2-Amino-6-[(p-fluorobenzyl) amino]-3-pyridine carbamic Acid Ethyl Ester Maleate **Fig. 1**. It is a non-opioid analgesic with muscle relaxant and neuroprotective properties, hydrolyzed to form the active agent, Flupirtine ¹.

Literature survey reveals that only UV ², HPLC ³⁻⁹ & LC-MS/MS ^{10, 11} methods are available for analytical estimation of FPM alone or combination with other drugs. Nowadays, high-performance thin-layer chromatography (HPTLC) has become a routine analytical technique due to its advantages of reliability in quantization, analysis at microgram and even in nanogram levels and cost-effectiveness. This method is advantageous since a large number of samples can be simultaneously subjected to analysis. The amount of solvent required in comparison to HPLC is very less. This reduces the time and cost of analysis and possibilities of pollution of the environment. HPTLC also facilitates repeated detection (scanning) of the chromatogram with the same or different parameters.

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Development & Validation of RP-HPLC Method for the Estimation of Doravirine in Bulk and Pharmaceutical Dosage Form

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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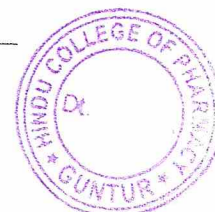
ABSTRACT

A simple, accurate, rapid and precise isocratic reversed phase high-performance liquid chromatographic method has been developed and validated for determination of Doravirine in tablets. The chromatographic separation was carried out on Dionex C₁₈ (250 x 4.6mm, 5μ) with a mixture of methanol: 0.05M potassium dihydrogen phosphate (40:60%v/v) as a mobile phase at a flow rate of 1.5 mL/min. UV detection was performed at 306 nm. The retention time was 5.24 min for Doravirine. Calibration plot was linear ($r^2=0.999$) over the concentration range of 200-600 μg/mL. The method was validated for accuracy, precision, specificity, linearity, robustness, LOD and LOQ. The proposed method was successfully used for quantitative analysis of tablets. No interference from any component of pharmaceutical dosage form was observed. Validation studies revealed that method is specific, rapid, reliable, and reproducible. The high recovery and low relative standard deviation confirm the suitability of the method for routine determination of Doravirine in bulk and tablet dosage form.

Keywords: Doravirine; RP-HPLC; tablets.

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METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF NETARSUDIL AND LATANOPROST IN BULK AND OPHTHALMIC SOLUTIONS

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ABSTRACT

A simple, accurate, precise method was developed for the simultaneous estimation of netarsudil and latanoprost in ophthalmic solutions. Chromatogram was run through Agilent C18 150 x 4.6 mm, 5 μ . Mobile phase containing 0.01N potassium dihydrogen ortho phosphate: methanol taken in the ratio 55:45 was pumped through column at a flow rate of 1.0ml/min. Temperature was maintained at 30°C. Optimized wavelength selected was 220nm. Retention time of netarsudil and latanoprost were found to be 2.589min and 3.221min. %RSD of method precision for netarsudil and latanoprost were found to be 0.7 and 1.4, respectively. % Recovery was obtained 99.86 % and 100.47% for netarsudil and latanoprost, respectively. LOD & LOQ values obtained from regression equations of netarsudil and latanoprost were 0.07, 0.02 and 0.21, 0.07 respectively. Regression equation of netarsudil is $y = 11999x + 1319.8$ and $y = 13329x + 380.64$ of latanoprost. Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular quality control test in industries.

KEYWORDS: Netarsudil, Latanoprost, RP-HPLC.

INTRODUCTION

Netarsudil is a drug for the treatment of glaucoma. Netarsudil a rho kinase inhibitor with nor epinephrine transport inhibitory activity that reduces production of aqueous. As of December 18, 2017 the FDA approved Aerie Pharmaceutical's Rhopressa (netarsudil ophthalmic solution) 0.02% for the indication of reducing elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension. Acting as both a rho kinase inhibitor and a nor epinephrine transport inhibitor, netarsudil is a novel glaucoma medication,^[16] in that it specifically targets the conventional trabecular pathway of aqueous humor outflow to act as an inhibitor to the rho kinase and nor epinephrine demonstrate.

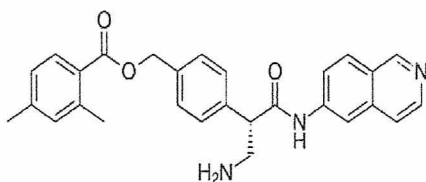


Figure 1: Chemical structure of netarsudil.

Latanoprost is a prodrug analog of prostaglandin F₂ alpha that is used to treat elevated intraocular pressure (IOP). It was initially approved by the FDA in 1998. Latanoprost is the first topical prostaglandin in F₂ alpha analog used for glaucoma treatment.^[17] It has been found to be well-tolerated and its use does not normally result in systemic adverse effects like other drugs used to treat elevated intraocular pressure, such as Timolol. Another benefit latanoprost is that it can be administered once a day.

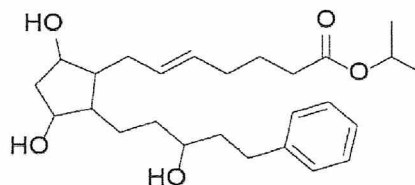


Figure 2: Chemical structure of latanoprost.

The literature survey revealed that there are a few HPLC and spectroscopic methods available for the determination of netarsudil and latanoprost in combination (18) with other drugs. In view of non-availability of HPLC methods for the selected



Synthesis, Characterization, Biological Activity and Molecular Docking of Novel Isoxazole Chalcones

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Abstract - Chalcones containing β -unsaturated carbonyl moiety connected by two aromatic rings and they are generally considered as an important synthon for the preparation of different heterocyclic derivatives. They constitute a range of promising biological activities and one among them is anti-mycobacterial activity. Owing to their synthetic feasibility and potential anti-mycobacterial activity, in the present study, synthesized and evaluated the anti-tubercular activity as well as molecular docking studies and drug-likeness parameters of a series of (*E*)-1-(4-substituted phenyl)-3-(isoxazol-3-yl) prop-2-en-1-one derivatives (1-10). These compounds were prepared by reacting between isoxazole-3-carbaldehyde and 4-substituted acetophenones having α -hydrogens in the presence of acidic medium and then the compounds were characterized by elemental analysis and spectroscopic studies. The anti-tubercular activity was performed against H37v strain of *Mycobacterium tuberculosis* by MABA assay and the compounds 8 and 10 containing electron releasing dimethylamino and ethoxy group respectively showed activity greater than the standard pyrazinamide (MIC = 3.125 μ g/ml) at MIC 1.562 μ g/ml. Further, molecular docking studies were assessed by Glidesoftware on thymidylate kinase enzyme and drug-likeness property of target compounds was done by using SCF Bio online software. The promising compounds arose out of this study are useful for further development of anti-tubercular drugs.

Keywords: Chalcone, Isoxazole, Tuberculosis, Pyrazinamide and Thymidylate kinase.

1. INTRODUCTION

Chalcones are the group of open-chain flavonoids with potential bioactivities. Structurally they comprise a ketovinyl bridge connected to two aromatic rings and they are useful template for the synthesis of biologically useful heterocyclic compounds [1-3]. Chalcones can be either isolated from nature or synthesized in laboratory employing aldol condensation [4] or Claisen-Schmidt condensation [5] reactions. The isolated chalcones are usually obtained in low yields [6]. Claisen-Schmidt condensation is most common method of synthesis where an aromatic aldehyde is condensed with an aromatic ketone either in basic or acidic medium. Chalcones due to restricted rotation of the $-C=C-$ bond of ketovinyl chain show geometrical isomerism and the

E or the *trans* isomer is thermodynamically more stable than the *Z* or the *cis* form [7]. Chalcones scaffold has a sundry of biological activities including antibacterial [8-10], antifungal [11-12], antiprotozoal [13], antitubercular [14-15], antimalarial [16], antiviral [17], antioxidant [18-19], anticancer [20-21], cytotoxic [22-23], antidiabetic [24], anti-inflammatory [25], antipsychotic [26], anticonvulsant [27], antihypertensive [28] and oestrogenic [29] activities. Isoxazole is one of the five membered heterocyclic ring that exists either as such or in its reduced form in the structure of marketed drugs including antitubercular drug cycloserine, chemotherapeutic agents cloxacillin and sulfonamides (sulfisoxazole, sulfamethoxazole) and anti-inflammatory drug- valdecoxib (Fig. 1).

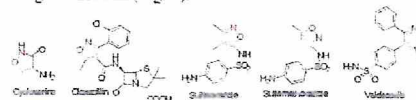


Fig. 1:- Structures of representative drugs bearing isoxazole and isoxazolidine rings.

In view of the privileged anti-tubercular nature of isoxazole ring and the chalcone template [14-30] (Fig. 2), herein we report the synthesis of new chalcone-like compounds (isoxazole rings substituted 2-propen-1-one) and their *in vitro* anti-tubercular activity along with drug-likeness properties, molecular docking studies.

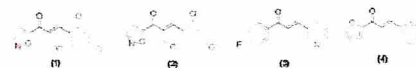


Fig. 2:- Examples of chalcones with potential anti-tubercular activity.

2. EXPERIMENTAL PART

Materials and methods

Isoxazole-3-carbaldehyde was purchased from Aldrich, Mumbai and remaining chemicals analytical grade made by Loba, SD fine and Hi media and purchased national scientific, Guntur, India. For TLC, silica gel-G purchased pre-coated silica gel 60 F254 (Merck, Mumbai) along with iodine crystals. Melting points were detected in open tube capillaries on melting point



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Simultaneous Quantification of Sofosbuvir, Velpatasvir and Voxilaprevir by RP-UPLC in Pharmaceutical Dosage forms

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ABSTRACT

The present research was focussed on development of a validated stability indicating method for simultaneous quantification of Sofosbuvir, Velpatasvir and Voxilaprevir in bulk and tablet dosage form using UPLC. The separation of analytes was achieved on C18 BEH column (100x2.1mm, 1.7µm), with mobile phase consisting of phosphate buffer and acetonitrile in the ratio of 65:35 v/v at a flow rate of 0.2ml/min. PDA detector was used to detect analytes at 265nm. The developed method was validated according to ICH guidelines. The method was linear over the concentration range of 100 - 600µg/ml for Sofosbuvir, 25 - 150µg/ml for Velpatasvir and Voxilaprevir. The retention times were found to be 0.908, 1.191 and 1.739 mins for Sofosbuvir, Velpatasvir and Voxilaprevir respectively. The %RSD values for precision (Repeatability), accuracy and robustness were complying with limits. The LOD and LOQ were found to be 0.76 & 2.30 for Sofosbuvir, 0.61 & 1.85 for Velpatasvir and 0.49 & 1.47 for Voxilaprevir. Forced degradation was done on analytes under the conditions of acid, alkali, peroxide, thermal, UV and water. The results obtained were within limits and the analytes are detected without any interference from degradants. The method was successfully applied for the assay of VOSEVI tablets. Thus, the developed method allows the quantification of Sofosbuvir, Velpatasvir and Voxilaprevir in bulk and tablets even in the presence of degradants.

KEYWORDS: Sofosbuvir, Velpatasvir, Voxilaprevir, Stability indicating, UPLC, ICH.

1. INTRODUCTION

A fixed-

dose combination of Sofosbuvir/Velpatasvir/Voxilaprevir is indicated for adult patients with chronic HCV without cirrhosis or with compensated cirrhosis.

[1] Sofosbuvir (SOF) is a nucleotide analogue HCV NS5B polymerase inhibitor that, in combination with other DAAs, is approved for the treatment of HCV infection of all genotypes. The IUPAC name for Sofosbuvir is (S)-Isopropyl 2-((S)-((2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-yl)methoxy)-(phenoxy)phosphorylamino)propanoate. It has a molecular formula of C₂₂H₂₉FN₃O₉P and a molecular weight of 529.45. Sofosbuvir is a white to off-white crystalline solid with a solubility of at least 2 mg/mL across the pH range of 2-7.7 at 37°C and is

slightly soluble in water [2]. The chemical structure of Sofosbuvir is shown in Fig 1.

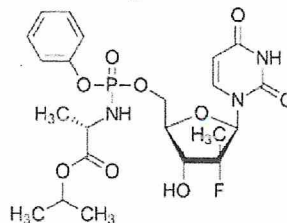


Fig 1: Chemical structure of Sofosbuvir

Velpatasvir (VEL), formerly GS-5816 is a potent pan-genotypic HCV NS5A inhibitor [3]. The IUPAC name for velpatasvir is Methyl {(1R)-2-[(2S,4S)-2-(5-{2-[(2S,5S)-1-[(2S)-2-[(methoxycarbonyl)amino]-3-methylbutanoyl]-5-methylpyrrolidin-2-yl]-1,11-dihydro[2]benzopyrano[4',3':6,7]naphtho[1,2-d]imidazol-9-yl]-1H-imidazol-2-yl)-4-(methoxymethyl)pyrrolidin-1-yl]-2-oxo-1-phenylethyl]carbamate. It has a molecular formula of C₄₉H₅₄N₈O₈ and a molecular weight of 883.0. The solubility of Velpatasvir is pH dependant [4]. The molecular structure of Velpatasvir is shown in figure 2.

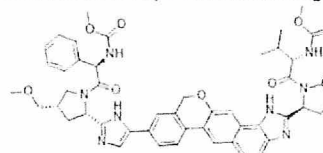


Fig 2: Chemical structure of Velpatasvir

Voxilaprevir (VOX, GS-9857) is a potent inhibitor of hepatitis C virus (HCV) non-structural protein NS3/4A [5]. The IUPAC name for voxilaprevir is (1aR,5S,8S,9S,10R,22aR)-5-tert-butylN-[(1R,2R)-2-(difluoromethyl)-1-[(1-methylcyclopropanesulfonyl)carbamoyl]cyclopropyl]-9-ethyl-18,18-difluoro-14-methoxy-3,6-dioxo-1,1a,3,4,5,6,9,10,18,19,20,21,22,22a-tetradecahydro-8H-7,10-methanocyclopropa[18,19][1,10,3,6]dioxadiazacyclononadecino[11,12-b]quinoxaline-8-carboxamide. It has a molecular formula of C₄₀H₅₂F₄N₆O₉S and a molecular weight of 868.9. Voxilaprevir is a white to light brown solid. It is slightly



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Method development and validation for estimation of ticagrelor in pharmaceutical dosage form by using RP-HPLC

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Abstract

The present study was conducted to develop a simple and precise analytical method for the estimation of ticagrelor in tablet formulation. Reverse Phase HPLC was used for method development and validation studies of ticagrelor. The optimum chromatographic conditions comprised of C18 column (Enable; 4.6 x 250mm, 5µm) as the stationary phase and acetonitrile and 0.01M phosphate buffer in the ratio of 60:40 v/v as the mobile phase. The flow rate was 1 mL/min with detection at 230 nm and a run time of 10 min. The retention time of ticagrelor was 5.45 min. The linearity studies indicated that the range of the developed method was 50-150 µg/mL with a correlation coefficient of 0.999. The method was specific with a percent mean recovery was found to be 100.6 %. The % RSD in the precision studies was 0.069. The validated method was applied to conduct the assay of ticagrelor in tablets with a percent mean recovery of 98.98 %. Conclusion: The developed and validated RP-HPLC isocratic method was simple, accurate and precise as per the ICH guidelines. It was suitable for the analysis of ticagrelor in bulk and tablet formulation.

Keywords: ticagrelor, HPLC, anti-platelet

Introduction

Ticagrelor is a tablet dosage form which acts as an antiplatelet medicine, makes your blood flow through your veins more easily. It can help prevent blood clots and sold under the brand name Brilinta, is a medication used for the prevention of stroke, heart attack and others with acute coronary syndrome and coronary arteries. It is a CYP3A4 substrate^[2] and weak CYP3A4 inhibitor. The drug was approved for use in the European Union by the European Commission on December 3, 2010. The drug was approved^[3] by the US Food and Drug Administration on July 20, 2011. Chemically it is (1S,2S,3R,5S)-3-(7-((1R,2S)-2-(3,4-difluorophenyl)cyclopropyl) amino)-5-(propylsulfanyl)-3H-[1,2,3]triazolo[4,5-d]pyrimidin-3-yl)-5-(2-hydroxyethoxy) cyclopentane-1,2-diol and molecular weight is 522.56. The main metabolite^[4] of this drug is AR-C124910XX is formed by CYP3A4 by dehydroxyethylation at position 5 of the cyclopentane ring in figure 1.

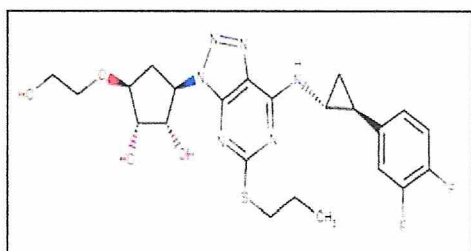


Fig 1: Chemical structure of Ticagrelor

Materials and Methods

Quantitative estimation of Ticagrelor was done by using an isocratic Shimadzu HPLC instrument on Enable C18 column (250 mm x 4.6 mm, 5µ). The Instrument is

equipped with binary pump and variable wavelength PDA detector. A 20µL Hamilton syringe was used for injecting the samples. Data was analysed by using LC Solutions software. Shimadzu UV-Visible spectrophotometer was used for spectral studies. Degassing of the mobile phase was done by using a Loba ultrasonic bath sonicator. A Shimadzu balance was used for weighing the materials. Ticagrelor pure drug was provided by Aurobindo Pharma Hyderabad. Optimised conditions: the mobile phase with Acetonitrile: 0.01M phosphate buffer (60:40 %v/v) was employed in isocratic mode at a flow rate of 1.0 mL/min. The run time was 8 min and 20µL of the sample was injected for every run into the column at wavelength of 230nm. Chromatographic conditions: A mixture of acetonitrile and 0.01M phosphate buffer in the ratio of 60:40 %v/v was employed to be the most suitable mobile phase for identical chromatographic separation of Ticagrelor. The solvent mixture was filtered through 0.45 µ membrane filter and sonicated to dissolve it completely. It was pumped through the column at a flow rate of 1.0 mL/min. Injection volume was 20µL and the column was maintained at ambient temperature and run time was set to be 10 min and detected of the drug was monitored at wavelength of 230nm and retention time was to be 5.45 min.

Preparation of standard stock solution

Accurately Weighed and transferred 90mg of ticagrelor working Standard into a 100ml clean dry volumetric flask. add 3/4th volume of HPLC graded mobile phase sonicated for 5 minutes and make up to the final volume with diluents to get concentrations like 0.9µg/ml of Ticagrelor.

Preparation of sample solution

Twenty tablets were accurately weighed, their mean weight was determined and they were mixed and finally powdered. Transfer the sample equivalent to 90mg of ticagrelor into a



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Method Development and Validation for Simultaneous Estimation of Ledipasvir and Sofosbuvir in Pharmaceutical Dosage Form by Using RP-HPLC

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ABSTRACT:

The study describes method development and subsequent validation of RP-HPLC method for simultaneous estimation of Ledipasvir and Sofosbuvir in combined tablet dosage form. Chromatographic separation was achieved on an Inspire C18 (4.6 x 150mm, 5.0 μ m) column using a mobile phase consisting of (25:75 v/v) Sodium phosphate buffer (pH-3.5): methanol at a flow rate of 1ml/min. The detection wavelength is 245 nm. The retention times of Ledipasvir and Sofosbuvir were found to be 1.974 min and 2.897 min respectively. The developed method was validated as per ICH guidelines. The developed and validated method was successfully used for the quantitative analysis of Ledipasvir and Sofosbuvir in tablet dosage forms.

Keywords: Ledipasvir, Sofosbuvir, RP-HPLC, Validation.

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Development and validation of stability indicating HPLC method for the estimation of etodolac in pharmaceutical dosage form

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Abstract

A rapid, simple, precise, accurate, and isocratic high performance liquid chromatography (HPLC) method has been developed for routine quality control of etodolac in pharmaceutical formulations. Separation was carried out by C18 column. The mobile phase was a mixture of solvent A (80:20%v/v – buffer and acetonitrile) and solvent B (75:25%v/v acetonitrile and buffer) in gradient mode at a flow rate of 1 mLmin⁻¹. The ultraviolet (UV) detection and column temperature were 227 nm and ambient in nature. The run time was 15 min under these chromatographic conditions. Excellent linear relationship between peak area and etodolac concentration in the range of 0.04-1 µg mL⁻¹ has been observed (r², 0.998). Developed method has been found to be sensitive, precise (the interday and intraday relative standard deviation (RSD) values for peak area was less than 0.4, accurate (recovery, 97.3-97.7%), specific and robust (% RSD were less than 1.00, for system suitability parameters). Proposed method has been successfully applied for quantification of etodolac in pharmaceutical formulations.

Keywords: etodolac, RP-HPLC, inflammation, NSAID, indole

Introduction

Etodolac is a monocarboxylic acid [1] that is acetic acid in which one of the methyl hydrogens is substituted by a 1,8-diethyl-1,3,4,9-tetrahydropyrano[3,4-b]indol-1-yl moiety. A preferential inhibitor of cyclo-oxygenase 2 and non-steroidal anti-inflammatory, it is used for the treatment of rheumatoid arthritis and osteoarthritis, and for the alleviation of postoperative pain. Administered as the racemate, only the (S)-enantiomer is active. It is a non-steroidal anti-inflammatory drug [2] (NSAID) with anti-inflammatory, analgesic and antipyretic properties. Its therapeutic effects are due to its ability to inhibit prostaglandin synthesis. It inhibits the activity of cyclooxygenase I and II, thereby preventing the formation of prostaglandin which is involved in the induction of pain, fever, and inflammation. It also inhibits platelet aggregation by blocking platelet cyclooxygenase and the subsequent formation of thromboxane A₂. Chemically (±) 1,8-diethyl-1,3,4,9-tetrahydropyrano-[3,4-b]indole-1-acetic acid and extensively metabolized in the liver. The hydroxylated-etodolac metabolites undergo further glucuronidation followed by renal excretion and partial elimination in the feces (16% of dose). The elimination half-life [3] of etodolac is between 6 and 8 hours in plasma and white crystalline compound, insoluble in water but soluble in alcohols, chloroform, dimethyl sulfoxide, and aqueous polyethylene glycol (Fig 1).

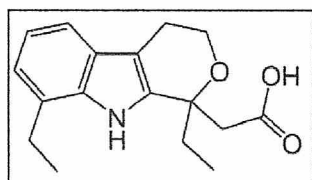


Fig 1: Chemical structure of etodolac

According to the literature search, there are few published high performance liquid chromatography (HPLC) methods for estimation of etodolac in dosage forms [4-7].

Experimental

Chemicals

Analytical grade chemicals were used without further purification in this study. Sodium dihydrogen phosphate, ortho-phosphoric acid, HPLC-grade acetonitrile and methanol were purchased from fisher scientific. Ultra-pure water was obtained from water purification unit (Millipore Elix[®]). Etodolac was obtained as a gift sample from adept pharma and bio science excellence pvt. Ltd., Hyderabad, India.

Stock Standard Solution

One hundred milligram pure drug was accurately weighed, dissolved in about 30 mL of deionized water and transferred to a 100 mL volumetric flask. Then the volume was completed to 100 mL with deionized water to obtain 1 mg mL⁻¹ of stock solution. The resulting stock solution was sonicated and filtered through a 0.45 µm filter. The stock solution was further diluted with deionized water to obtain the required concentration of standard solutions (10–100 mg mL⁻¹) before being injected into the system for analysis.

Sample Solution

Ten etodolac tablets were accurately weighed and transferred to a dry and clean mortar, then ground into a fine powder. Next, tablet powder equal to 250 mg etodolac was transferred to a volumetric flask of 250 mL. About 100 mL deionized water was added and this flask was attached to a rotary shaker for 10 min. to completely disperse the ingredients. The mixture was sonicated for 30 min, diluted to volume with deionized water to give a solution containing 1,000 mg mL⁻¹ and then filtered through a 0.45 µm filter.

**VALIDATED STABILITY INDICATING RP-HPLC METHOD FOR SIMULTANEOUS
DETERMINATION OF LUMACAFTOR AND IVACAFTOR IN PHARMACEUTICAL
FORMULATIONS**

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ABSTRACT

A simple, Accurate, precise method was developed for the simultaneous estimation of the Lumacaftor and Ivacaftor in Tablet dosage form. Chromatogram was run through AltimaC18 (150 x 4.6 mm, 5 μ). Mobile phase containing Buffer:Acetonitrile taken in the ratio 55:45v/v was pumped through column at a flow rate of 0.9 ml/min. Buffer used in this method was KH₂PO₄. Temperature was maintained at 30°C. Optimized wavelength selected was 220 nm. Retention time of Lumacaftor and Ivacaftor were found to be 2.283 min and 2.759. %Recovery was obtained as 100.57% and 99.56% for Lumacaftor and Ivacaftor respectively. LOD, LOQ values obtained from regression equations of Lumacaftor and Ivacaftor were 1.06, 3.22 and 0.16, 0.48 μ g/ml respectively. Regression equation of Lumacaftor is $y = 11244x + 12930$, and $y = 8284x + 7794.4$ of Ivacaftor. The developed method was simple and economical that can be adopted in regular Quality control test in Industries.

KEYWORDS: Ivacaftor, Lumacaftor, RP-HPLC.**INTRODUCTION**

Lumacaftor is a drug used in combination with Ivacaftor as the fixed dose combination product for the management of Cystic Fibrosis (CF) in patients aged 6 years and older. Cystic Fibrosis is an autosomal recessive disorder caused by one of several different mutations in the gene for the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) protein, a transmembrane ion channel involved in the transport of chloride and sodium ions across cell membranes of the lungs, pancreas, and other organs. Mutations in the CFTR gene result in altered production, misfolding, or function of the CFTR protein and consequently abnormal fluid and ion transport across cell membranes. As a result, CF patients produce thick, sticky mucus that clogs the ducts of organs where it is produced making patients more susceptible to infections, lung damage, pancreatic insufficiency, and malnutrition. Lumacaftor improves CF symptoms and underlying disease pathology by aiding the conformational stability of F508del-mutated CFTR proteins, preventing misfolding and resulting in increased processing and trafficking of mature protein to the cell surface.^[1,2]

Ivacaftor (also known as Kalydeco or VX-770) is a drug used for the management of Cystic Fibrosis (CF) in patients aged 2 years and older. Cystic Fibrosis is an autosomal recessive disorder caused by one of several different mutations in the gene for the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) protein,

an ion channel involved in the transport of chloride and sodium ions across cell membranes. CFTR is active in epithelial cells of organs such as of the lungs, pancreas, liver, digestive system, and reproductive tract. Alterations in the CFTR gene result in altered production, misfolding, or function of the protein and consequently abnormal fluid and ion transport across cell membranes. As a result, CF patients produce a thick, sticky mucus that clogs the ducts of organs where it is produced making patients more susceptible to complications such as infections, lung damage, pancreatic insufficiency, and malnutrition.^[3,4]

The stability indicating method is defined as validated quantitative analytical method that can detect the change with time in the chemical, physical or microbiological properties of the drug substance and the drug product, that are specific so that the content of active ingredient, degradation can be accurately measured without interference. Stability testing provides information about degradation mechanisms, potential degradation products, possible degradation pathways of the drug as well as interaction between the drug and the excipients in drug product.

Literature survey revealed few analytical methods were reported for both the drugs in alone and in combination HPLC^[5-8] methods. The aim of the present study was to develop a simple, precise, reliable, sensitive and selective stability indicating HPLC method with UV



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Development and Validation of Novel RP-HPLC method for the estimation of Canagliflozin in bulk and pharmaceutical dosage forms

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Abstract: A validated RP HPLC method for the estimation of canagliflozin in tablet dosage form on Inertsil ODS C₁₈ (250 x 4.6 x 5 µm column) using mobile phase consisting of methanol and acetonitrile with ratio of 60:40 v/v. Flow rate was maintained at 1.2 mL/min with 254 nm UV detection. The retention time obtained for canagliflozin was at 2.8 min. The detector response was linear in the concentration range of 10 – 250 µg/mL. This method has been validated and shown to be specific, sensitive, precise, linear, accurate, rugged, robust and fast. Hence, this method can be applied for routine quality control of canagliflozin tablet dosage forms as well as in bulk drug.

Keywords: RP-HPLC, Canagliflozin, UV.

Introduction:

Canagliflozin¹ is used along with diet and exercise, and sometimes with other medications, to lower blood sugar levels in people with type 2 diabetes (condition in which blood sugar is too high because the body does not produce or use insulin normally). It is a third-line medication to metformin² and used to reduce the risk of stroke, heart attack, or death in people who have type-2 diabetes along with heart and blood vessel disease. Structurally 2S,3R,4R,5S,6R)-2-[3-[[5-(4-fluorophenyl)thiophen-2-yl]methyl]-4-methylphenyl]-6-(hydroxymethyl)oxane-3,4,5-triol and molecular mass 462.5 g/mol. It is in a class of medications called sodium-glucose co-transporter 2 (SGLT2)³ inhibitors. It lowers blood sugar by causing the kidneys to get rid of more glucose in the urine. It is not used to treat type 1 diabetes (condition in which the body does not produce insulin and, therefore, cannot control the amount of sugar in the blood). Over time, people who have diabetes and high blood sugar can develop serious or life-threatening complications, including heart disease, stroke, kidney problems, nerve damage, and eye problems. It comes as a tablet to take by mouth. It is usually taken once a day before breakfast or the first main meal of the day. It is primarily metabolized by O-glucuronidation. It is mainly glucuronidated⁴ by UGT1A9 and UGT2B4 enzymes to two inactive O-glucuronide metabolites (Figure-1).

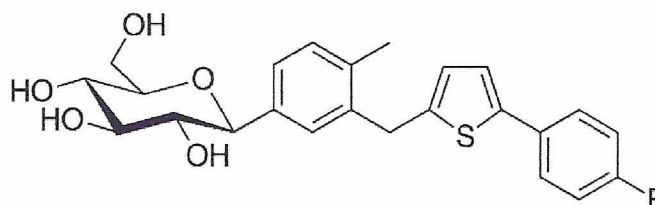


Figure-1: Chemical structure of canagliflozin

Literature survey of the drug revealed that, only few works conducted by HPLC method⁵⁻⁷. Hence the aim of present work was to develop and validate an accurate, precise, linear, robust and rapid method for the estimation of canagliflozin.

Materials and methods:

Canagliflozin API was kindly gifted by Aurobindo pharma, Hyderabad. All the chemicals and solvents used were of HPLC grade.

Instruments:

The analysis was performed on Waters HPLC (with a software Empower 2), fitted with a gradient pump PDA detector and ODS (250x4.6mm, 5µm) column which is maintained at an ambient temperature. The optimized mobile phase composition was methanol and acetonitrile (60:40). The mobile phase was run at a flow rate of 1.2ml/min. The injection volume was 10µl. The chromatographic run time was adjusted as 6min. The wavelength of the detector was set at 254nm for the analysis of the drug.

Preparation of mobile phase: The optimized mobile phase consists of a mixture methanol and acetonitrile in the ratio of 60:40 v/v and mobile phase used as diluent.

Preparation of Standard stock solution: Accurately weighed 10mg of canagliflozin was taken in a 10ml standard volumetric flask and dissolved in few ml of methanol. Then the volume was made up to the mark with methanol.



METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF METFORMIN HCl AND MYO-INOSITOL IN PHARMACEUTICAL DOSAGE FORM BY USING RP-HPLC

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ABSTRACT

A simple, sensitive, specific, accurate reversed phase high performance liquid chromatographic method was developed for the simultaneous estimation of Metformin HCl and Myo-Inositol in pharmaceutical dosage form. RP-HPLC separation was achieved on an Enable C-18 250mm x 4.6mm, 5µm column. The mobile phase composed of Acetonitrile: Water (70:30 % v/v) [HPLC Grade] at flow rate 1ml/min with UV detection at 228 nm. The retention times of Metformin HCl and Myo-Inositol were found to be 2.752 min and 3.626 min respectively. Linearity was established for Metformin HCl and Myo-Inositol in the range of 25-150µg/ml and 60-360µg/ml respectively. System precision and method precision was found to be within the limits of the acceptance criteria. Relative standard deviation of Metformin HCl and Myo-Inositol for System precision was found to be 0.22 and 0.02 respectively and method precision was found to be 0.23 and 0.257 respectively. The percentage recoveries for Metformin HCl and Myo-Inositol were found to be in the range of 100.15-102.0% and 99.75-100.04% respectively. The limit of detection was 0.17µg/ml and 1.08µg/ml respectively. The limit of quantification was 0.52µg/ml and 0.37µg/ml respectively and the method was found to be specific. This method can be successfully employed for simultaneous quantitative analysis of Metformin HCl and Myo-Inositol in bulk drugs and formulations. The results indicate that there is no interference from excipients for the proposed method, thus making the method simpler, less time consuming and suitable for routine estimation of Metformin HCl and Myo-Inositol tablet formulation.

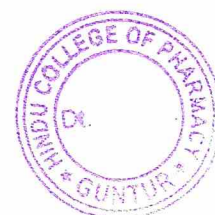
KEYWORDS: RP-HPLC, Metformin HCl, Myo-Inositol, formulation.

INTRODUCTION

Metformin HCl

Metformin HCl [figure1] is an oral antidiabetic drug in the biguanide class. It is most widely prescribed antidiabetic drug in the world used to treat type 2 diabetes. Metformin HCl helps to control the amount of glucose (sugar) in blood. It decreases the amount of glucose and also increases body's response to insulin, a natural substance that controls the amount of glucose in the blood. It is not used to treat type 1 diabetes.^[1] It is also used for treatment of gestational diabetes, polycystic ovary syndrome (PCOS).^[2] It works by decreasing hyperglycemia primarily by suppressing glucose production by the liver (hepatic gluconeogenesis). It helps to reduce LDL cholesterol and triglyceride levels, and is not associated with weight gain. Metformin HCl comes as a liquid, as a tablet, and as an extended-release

(long-acting) tablet taken orally. It is used alone or with other medications. Very rare but serious side effect with Metformin HCl is lactic acidosis. Other than that common side effect are gastrointestinal irritations, including diarrhea, cramps, nausea, vomiting and increased flatulence. Literature survey revealed the HPLC methods for estimation of Metformin HCl in Bulk, human plasma and pharmaceutical dosage forms.^[2-7] LC-MS-MS method was reported for the determination of Metformin in human plasma.^[8] Literature survey reveals several Analytical and Bioanalytical methods for the analysis of Metformin. These methods reported with Metformin alone or in combination with other drug. These include HPLC^[9-11] and spectrophotometric analysis of Metformin in tablets.^[12-13]



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Synthesis, Characterization, Anti-Mycobacterial Evaluation and *In-Silico* Molecular Docking of Novel Isoxazole Clubbed Pyrimidine Derivatives

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Authors' contributions

This work was carried out in collaboration between both authors. Author RS designed the study, performed the statistical analysis and wrote the first draft of the manuscript. This total research work was managed by author NP. Both authors read and approved the final manuscript.

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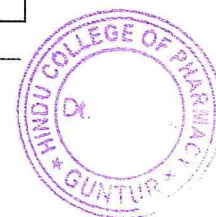
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ABSTRACT

In the present research, we tend to ready a series of novel pyrimidine-linked isoxazole derivatives (11-20). The molecular structure and the elemental composition of these compounds were confirmed by spectroscopic studies and elemental analysis. MABA (Microplate alamar Blue Assay) assay was employed for assessing the antitubercular activity against the Mycobacterium tuberculosis H37Rv strain. Among the ten synthesized compounds, 18 and 20 showed excellent anti-tubercular activity than the reference (MIC-3.125 µg/ml) at 0.78 µg/mL. The compounds were found to possess good binding affinity than a standard against thymidylate kinase enzyme (PDB-1MRS) as evidenced by the molecular docking studies. Additionally, the bioactivity was conducted by Mol-inspiration software tool and the drug-likeness property was evaluated on Lipinski's rule of five by SCFBio online software. The lead compounds identified through these studies could be useful for the furtherance of the drug discovery process in the area of antitubercular research.

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Development and validation of RP-UPLC method for the simultaneous estimation of pregabalin and epalrestat in pharmaceutical dosage form

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Abstract

In our present investigation we have developed an accurate procedure to estimate pregabalin and epalrestat in tablet dosage form. Chromatogram column was used HSS (100mmx2.1mm, 1.8 μ). Orthophosphoric acid (0.1%): acetonitrile 65:35 v/v was used as mobile phase and it was pumped through at a flow rate of 0.5 ml/min. Temperature was constant at 25°C. Wavelength was selected at 210 nm. Chromatographic retention time of pregabalin and epalrestat were observed at 1.100 min and 1.841 min. Percentage of recovery was acquired as 100.25% and 100.68% for pregabalin and epalrestat. Limit of Detection (LOD) were found 0.02 and 0.11 respectively for pregabalin and epalrestat and limit of Quantitation (LOQ) were found 0.06 and 0.33 for pregabalin and epalrestat respectively. Results of analysis were validated statistically. The results of the study showed that the proposed RP-UPLC method is simple, rapid, precise and accurate, which is useful for the routine determination of pregabalin and epalrestat in tablet dosage form.

Keywords: pregabalin, epalrestat, RP-UPLC, OPA (0.1%)

Introduction

Pregabalin was used to relieve neuropathic pain¹ (pain from damaged nerves) that can occur in arms, hands, fingers, legs, feet, or toes. Pregabalin extended-release tablets are usually taken once daily after an evening meal. Take pregabalin at around the same time(s) every day. The pharmacology of pregabalin requires binding to $\alpha_2\delta$ subunits², including structure-activity analyses of compounds binding to $\alpha_2\delta$ subunits. Structurally name is (S)-3-(aminomethyl)-5-methylhexanoic acid and mass is 159. Less than 2% of pregabalin is metabolized and it is excreted virtually unchanged in the urine (Fig 1). Epalrestat is used for the treatment of nerve damage due to diabetes called diabetes neuropathy³. Structurally name is ((5Z)-5-[(2E)-2-Methyl-3-phenyl-2-propen-1-ylidene]-4-oxo-2-thioxo-3-thiazolidineacetic acid and mass is 319. It inhibits the enzyme aldose reductase and reduces the level of sorbitol, which damages the nerves and reversed the renal accumulation of the polyol pathway metabolites of sorbitol and fructose, and increased myo-inositol level⁴. It is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), sparingly soluble in aqueous buffers (Fig 2). In literature, a very few methods were developed to estimate combination of pregabalin and epalrestat in tablet dosage form by HPLC⁵⁻¹¹ and only one effort was done by UPLC¹². In this investigation we have developed an optimized method to estimate such combination in tablet dosage forms are reported for the analysis of combination of various drugs¹³.

Experimental

Chemicals and reagents

Epalrestat and Pregabalin pure drugs were supplied by zyduscadila Ltd., Ahmedabad. Acetonitrile, methanol, ortho-phosphoric acid and HPLC grade water were purchased from Rankem, Hyderabad, India. Combination of

Epalrestat and Pregabalin tablets (Pre-Aldonil) were purchased from local market.

Instrument

UPLC analysis was performed on WATERS, acquity software: Empower 2, 2695 separation module equipped with auto Sampler and UV detector (2487) and column HSS (100mmx2.1mm, 1.8 μ). A manually operating Rheodyne injector with 10 μ L sample volume was equipped with the UPLC system. In addition, an electronic analytical weighing balance (Sartorius), digital pH meter (Adwa – AD 1020), a sonicator (sonica, model 2200 MH) and UV-Visible Spectrophotometer (LABINDIA UV 3000+) were used in this study.

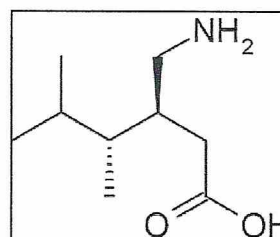


Fig 1: Molecular structure of Pregabalin

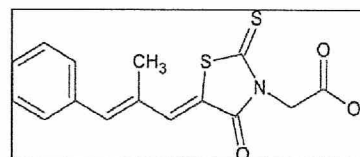
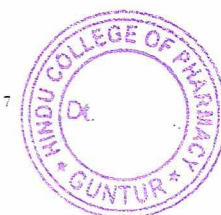


Fig 2: Molecular structure of Epalrestat



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Stability indicating HPLC Method Development and Validation for the Simultaneous Estimation of Ritonavir, Ombitasvir and Paritaprevir in combined Tablet Dosage Form

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ABSTRACT

A simple, Accurate and precise method was developed for the simultaneous estimation of the Ritonavir, Ombitasvir and Paritaprevir in combined tablet dosage form. Chromatogram was run through BDS C18 (150 x 4.6 mm, 5 μ). Mobile phase containing 0.1% OPA and Acetonitrile in the proportion of 60:40 A was pumped through column at a flow rate of 1.0ml/min. Temperature was maintained at 30°C. Optimized wavelength for Ritonavir Ombitasvir and Paritaprevir was 260nm. Retention time of Paritaprevir, Ritonavir and Ombitasvir Were found to be 2.315 min; 3.114 min and 3.650 min. %RSD of system precision for Paritaprevir, Ritonavir and Ombitasvir were and found to be 0.4, 1.3 and 1.0 respectively. %RSD of method precision for Paritaprevir, Ritonavir and Ombitasvir were and found to be 0.2, 0.4 and 0.9 respectively.

Key Words: Ritonavir, Ombitasvir, Paritaprevir, RP-HPLC

I. INTRODUCTION :

Ritonavir¹ is an HIV protease inhibitor that interferes with the reproductive cycle of HIV. Although it was initially developed as an independent antiviral agent, it has been shown to possess advantageous properties in combination regimens with low-dose ritonavir and other protease inhibitors. It is now more commonly used as a booster of other protease inhibitors and is available in both liquid formulation and as capsules protease inhibitors. It is now more commonly used as a booster of other protease inhibitors and is available in both liquid formulation and as capsules. Ritonavir is chemically described as 1,3-thiazol-5-ylmethyl N-[(2S,3S,5S)-3-hydroxy-5-[(2S)-3-methyl-2-[[methyl(2-(propan-2-yl)-1,3-thiazol-4-yl)methyl]carbamoyl]amino]butanamido]-1,6-diphenylhexan-2-yl]carbamate

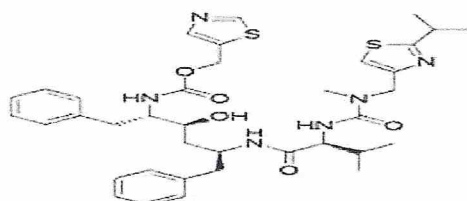


Fig.1: Chemical structure of Ritonavir

Ombitasvir² is a direct acting antiviral medication used as part of combination therapy to treat chronic Hepatitis C, an infectious liver disease caused by infection with Hepatitis C Virus (HCV).. Ombitasvir is chemically described as methyl N-[(2S)-1-[(2S)-2-[(4-[(2S,5S)-1-(4-tert-butylphenyl)-5-{4-[(2S)-1-[(2S)-2-[(methoxycarbonyl)amino]-3-methylbutanoyl]pyrrolidine-2-amido]phenyl]pyrrolidin-2-

yl]phenyl] carbamoyl)pyrrolidin-1-yl]-3-methyl-1-oxobutan-2-yl]carbamate.



**METHOD DEVELOPMENT AND VALIDATION FOR THE
SIMULTANEOUS ESTIMATION OF EMTRICITABINE,
BICTEGRAVIR AND TENOFOVIR IN BULK AND TABLET DOSAGE
FORM BY RP-HPLC METHOD**

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ABSTRACT

A stability-indicating reversed-phase high-performance liquid chromatography (RP-HPLC) method with a high sensitivity was developed for simultaneous estimation of Emtricitabine, Bictegravir and Tenofovir in pharmaceutical dosage form. Chromatographic separation of Emtricitabine, Bictegravir and Tenofovir were successfully achieved on an Agilent C18 (150×4.6mm, 5μ) with an mobile phase composed of a mixture of 0.01N Na₂HPO₄: acetonitrile (50:50, v/v) at a flow rate of 1.00 mL min⁻¹. The drugs were quantified using a wavelength of 272 nm. The reversed-phase HPLC method has been validated as per International Conference on Harmonisation (ICH) of Technical Requirements for Registration of

Pharmaceuticals for Human Use guidelines. The proposed method showed a good linearity in the concentration range of 25–150 μg/mL for Emtricitabine, 6.25–37.5 μg/mL for Bictegravir and 3.125–18.75 μg/mL for Tenofovir under optimized conditions. The statistical performance of the HPLC method was fully validated and the performance results of the proposed HPLC method were considerably satisfactory with reference to the RSD values of validation parameters like linearity, system precision, method precision, robustness, ruggedness etc.,. The validated method was successfully applied to quantify the Emtricitabine, Bictegravir and Tenofovir in tablet form.

KEYWORDS: Emtricitabine, Bictegravir and Tenofovir, RP-HPLC.



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DEVELOPMENT AND VALIDATION OF GAS CHROMATOGRAPHIC METHOD FOR ESTIMATION OF ISO-AMYL-2, CYANOACRYLATE IN PHARMACEUTICAL DOSAGE FORM

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ABSTRACT

A simple and rapid analytical method for determination of iso-amyl-2, cyanoacrylate in pharmaceutical dosage form was developed and validated using gas chromatography (GC). The solutions of standard and the sample were prepared in methylene dichloride. GC separation was performed in about 3.649 min using a 30 m x 0.32 mm I.D. (film thickness 0.25 μ m) HP-5 capillary column. Helium was used as carrier gas at a flow-rate of 1 ml min⁻¹. After injection of the sample at inlet temperature 230°C, the temperature of the GC oven was as follows: initial temperature was 150°C, held for 5min, increased to 200°C at a rate of 50°C min⁻¹ held for 5 min, and finally to 240°C at a rate of 5°C min⁻¹ and held for 3.3 min. Detector temperature is 250°C. 2 μ l was injected in splitless mode. Calibration curve was linear between the concentration range 50-150 μ g/ml. The method was validated for specificity, linearity, precision, accuracy and limit of quantitation. Also, the method was applied to directly and easily to the analysis of the pharmaceutical dosage form.

Keywords: GC-FID, iso-amyl-2, cyanoacrylate, HP-5 column.

INTRODUCTION

Iso-Amyl 2 Cyanoacrylate is an advanced gamma sterilized, non-pigmented, nontoxic, non-allergic, and biostatic tissue adhesive¹. Chemically it belongs to the class of organic compounds known as cyanoacrylates. It helps in rapid wound closure with minimal scarring, and reduces the risk of postsurgical infection and trauma, apart from being simple to use, and showing a demonstrable safety², thus providing effective wound healing with minimal risk. The mechanism with which Iso-Amyl 2-cyanoacrylate acts is by getting converted into a polymer on coming in contact with moisture, and though, by itself, it is an inert material, it solidifies rapidly within 5-10 s. Chemical formula is C₉H₁₃NO₂ and chemical weight is 167.2 g/mol (Fig. 1: Chemical structure of Iso-Amyl-2-Cyanoacrylate).

No previous GC-FID method for the determination and quantification of Iso-Amyl-2-

Cyanoacrylate in pharmaceutical preparations in literature. Therefore, the purpose of this investigation was to develop and validate a simple, rapid, sensitive, precise, accurate and specific GC method.

MATERIALS AND METHODS

CHEMICALS AND REAGENTS

Iso-Amyl-2-Cyanoacrylate was purchased from GSK Ltd., Mumbai, and other chemicals and solvents used were of analytical grade. Amcrylate injection containing 130 mg of Iso-Amyl-2-Cyanoacrylate was obtained from Concord Drugs Ltd., Hyderabad.

Instrumentation

The GC-FID system was performed on an Agilent 6890 N Network GC equipped with a flame ionization detector, Agilent 7683 series auto sampler, Agilent chemstation and HP-5 column with 0.25 μ m film thickness (30 m x 0.320 mm I.D.). Injection and detector



Method Development and Validation for the Simultaneous Estimation of Doravirine, Lamivudine and Tenofovir Bulk and Pharmaceutical Dosageform

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ABSTRACT

A simple, precise, accurate, sensitive, reliable and cost effective Stability indicating RP-HPLC method was developed and validated for the simultaneous estimation of the Lamivudine, Tenofovir and Doravirine in Api and Tablet dosage form. Chromatogram was run through Zorbax C18 150x4.6mm, 5m. Mobile phase containing 0.1% Formic acid and Acetonitrile in the ratio of 70:30 v/v was pumped through column at a flow rate of 1ml/min. Temperature was maintained at 30°C. Optimized wavelength for Lamivudine, Tenofovir and Doravirine was 260.0 nm. Retention time of Lamivudine, Tenofovir and Doravirine were found to be 2.383 min, 2.977 min and 3.926 min respectively. The linearity was established over the concentration ranges of 20–100 µg/ml and 30–150 µg/ml with correlation coefficient %RSD of method precision for Doravirine, Lamivudine and Tenofovir were found to be 1.6, 1.1 and 1.0 respectively. % recovery was obtained as 100.56%, 99.98% and 99.35% for Doravirine, Lamivudine and Tenofovir respectively. LOD values are obtained from regression equations of Doravirine, Lamivudine and Tenofovir were 0.21 ppm, 0.64 ppm, 0.55 ppm and LOQ values are obtained from regression equations of Doravirine, Lamivudine and Tenofovir were 0.65 ppm, 1.94 ppm, 1.67 ppm respectively. Percentage assay of Doravirine, Lamivudine and Tenofovir was found to be 99.95%, 100.19% and 100.43% respectively. Doravirine, Lamivudine and Tenofovir were subjected to stress conditions like Acidic, Alkaline, Oxidation, Thermal and Photo degradation and results showed that Doravirine, Lamivudine, Tenofovir was more sensitive towards Acid degradation and The %

degradation results were within the limits. Hence the developed method can be successfully employed for the routine analysis of Doravirine, Lamivudine and Tenofovir in bulk and pharmaceutical dosageform.

KEYWORDS: Doravirine, Lamivudine, Tenofovir, RP-HPLC

I. INTRODUCTION

Doravirine is chemically 3-chloro-5-({1-[(5-hydroxy-4-methyl-4H-1,2,4-triazol-3-yl)methyl]-2-oxo-4-(trifluoromethyl)-1,2-dihydropyridin-3-yl}oxy)benzotrile. And its molecular formula is $C_{17}H_{11}ClF_3N_5O_3$, Molecular Weight 425.749

Doravirine has been used in trials studying the treatment of HIV-1, HIV-1 Infection, Renal Impairment, and Human Immunodeficiency Virus (HIV) Infection.

Lamivudin is chemically 4-amino-1-[(2R,5S)-2-(hydroxymethyl)-1,3-oxathiolan-5-yl]-1,2-dihydropyrimidin-2-one. Molecular formula is $C_8H_{11}N_3O_3S$, molecular weight is 229.256. A reverse transcriptase inhibitor and zalcitabine analog in which a sulfur atom replaces the 3' carbon of the pentose ring. It is used to treat Human Immunodeficiency Virus Type 1 (HIV-1) and hepatitis B (HBV).

Tenofovir is chemically ({[(2R)-1-(6-amino-9H-puryl)propanyl]oxy}methyl) phosphonic acid. Its molecular formula is $C_9H_{14}N_5O_4P$ and its molecular weight is 287.2123. Tenofovir is in a class of medications called nucleoside reverse transcriptase inhibitors (NRTIs). It works by decreasing the amount of HIV and HBV in the blood. Tenofovir may not prevent the spread of hepatitis B to other people.



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Research Article

HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF ITRACONAZOLE AND TERBINAFFINE IN BULK AND PHARMACEUTICAL DOSAGE FORM

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Abstract:

A simple, Accurate, precise method was developed for the simultaneous estimation of the Terbinafine and Itraconazole in bulk and pharmaceutical dosage form. Chromatogram was run through phenomenon C18 150 x 4.6mm, 5.0µ. Mobile phase containing Buffer 0.1%OPA: Methanol taken in the ratio 60:40% was pumped through column at a flow rate of 1.0ml/min. Temperature was maintained at 30°C. Optimized wavelength selected was 245 nm. Retention time of Terbinafine and Itraconazole were found to be 2.331 min and 2.934 min. %RSD of the Terbinafine and Itraconazole were found to be 0.4 and 0.9 respectively. %Recovery was obtained as 99.95% and 100.98% for Terbinafine and Itraconazole respectively. LOD, LOQ values obtained from regression equations of Terbinafine and Itraconazole were 0.94, 2.86 and 0.70, 2.13 respectively. Regression equation of Terbinafine is $y = 6951x + 2494$, and $y = 7657x + 2075$ of Itraconazole. Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

Key Words: Terbinafine, Itraconazole, RP-HPLC**Corresponding author:****G. Indira Priyadarshini,**

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Stability indicating RP-HPLC method development and validation for the simultaneous determination of vilanterol trifinate and umeclidinium bromide in bulk and pharmaceutical dosage forms

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A B S T R A C T

A simple, Accurate, precise method was developed for the simultaneous estimation of the Vilanterol trifinate and Umeclidinium bromide in dosage form. Chromatogram was run through symmetry C18 (150 x 4.6 mm, 5 μ m). Mobile phase containing Water: Acetonitrile taken in the ratio 65:35 was pumped through column at a flow rate of 1.0ml/min. Retention time of Vilanterol trifinate and Umeclidinium bromide were found to be 2.96 min and 2.315 min. %RSD of the Vilanterol trifinate and Umeclidinium bromide were found to be 1.0 and 0.6 respectively. %Recovery was obtained as 101.8% and 99.78% for Vilanterol trifinate and Umeclidinium bromide respectively. LOD, LOQ values obtained from regression equations of Vilanterol trifinate and Umeclidinium bromide Vilanterol were 0.54, 0.18 and 0.16, 0.05 respectively. Regression equation of Vilanterol trifinate is $y = 9969.6x + 1935.1$ and $y = 9122.6x + 6120.9$ of Umeclidinium bromide. Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

Key Words: Vilanterol trifinate, Umeclidinium bromide, RP-HPLC

INTRODUCTION

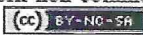
Vilanterol trifinate is approved by the FDA in December 2013 for use in combination with umeclidinium bromide. Vilanterol is a selective long-acting beta2-adrenergic agonist (LABA) with inherent 24-hour activity for once daily treatment of COPD and asthma. The combination drug is

marketed by GSK (Glaxo smith kline) under the brand Anoro Ellipta.

Umeclidinium bromide is a long-acting muscarinic antagonist (LAMA) used as maintenance treatment for symptoms of chronic obstructive pulmonary disease (COPD). It is available as a once-daily inhalation monotherapy or as a fixed-dose

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Development and Validation of New RP-UPLC Method For Simultaneous Determination of Lamivudine and Dolutegravir in Combined Dosage Form

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ABSTRACT

A reverse phase ultra performance liquid chromatographic method (RP-UPLC) was developed for the determination of Lamivudine and Dolutegravir in combined and tablet dosage forms. Separation was carried out by using Waters- UPLC system equipped with auto sampler, PDA detector, Inertsil C18 (2.1 x 50 mm, 1.8 μ m) column, used phosphate buffer (pH-6.0) - acetonitrile in gradient mode at a flow rate of 0.25 ml/min used as mobile phase and detection was carried out at 257 nm at ambient temperature. The active pharmaceutical ingredient was extracted from tablet dosage form using a mixture of acetonitrile and water (50:50) as diluent. The calibration graphs were linear and the method showed excellent recoveries in tablet dosage form. The developed UPLC method was validated and meets the requirements delineated by the International Conference on Harmonization (ICH) guidelines with respect to linearity, accuracy, precision and robustness. The intra day and inter-day variation was found to be less than 1%. The method was reproducible and selective for the estimation of lamivudine and dolutegravir.

Keywords: UPLC, Lamivudine, Dolutegravir.

1. Introduction

Lamivudine¹ is a reverse transcriptase inhibitor and also analogue of zalcitabine, in which a sulfur atom replaces the 3' carbon of the pentose ring. Nomenclature: 4-amino-1-[(2R,5S)-2-(hydroxymethyl)-1,3-oxathiolan-5-yl]-1,2-dihydropyrimidin-2-one. Molecular formula is C₈H₁₁N₃O₃S. Molecular weight is 229.2. It is an amorphous white, solid, freely soluble in water and boiling alcohol². Its structural formula is shown in figure 1.

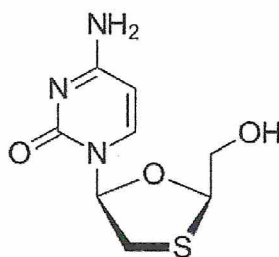


Figure 1: Chemical Structure of lamivudine

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IS CANNABIS SATIVA, THE MIND ALTERING NIGHTMARE PLANT OF THE WORLD?

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ABSTRACT

Cannabis Sativa is the hared weed. Marijuana, is popularly known as pot, weed, ganja, Mary jane nicknames. Marijuana, far-reaching well liked mind-boggling medicaments across the globe. Cannabis Smolder assassinated, but consuming marijuana could stretch out the growth of cancer. This is used as hallucinogenic materials by man from times immemorial. Due to its known ability to induce euphoria and relaxation, cannabis (marijuana) commonly-used substances worldwide for decades.

Transitory use of the drug debilitates reasoning and planning. In prolonged studies, teens who smoke marijuana have lower IQs afterwards. When puff on, marijuana releases cannabinoids, which produce neurotransmitters in brain. These cannabinoids give medicinal value to Marijuana. The cannabinoids acknowledge dissimilar domains of the brain exert influence on memory, pleasure and muscle movement. Marijuana has delta-9-tetrahydrocannabinol (THC) which binds to CB1 brain cannabis receptor.

THC acts by preventing the delivery of L-glutamate, GABA, noradrenaline, dopamine, 5-HT and acetylcholine.

INTRODUCTION:

Toxicity of marijuana shows similar symptoms to that of scrotonin (1). The number of cases of drug abuse are increasing in emergency departments (ED) in the USA, because of legalization of Cannabis sativa (2) Psychotic states, cardiac toxicity, and neurotoxicity have been reported as clinical sequelae of THC-induced toxicity (2).

Serotonin disorder shows dilated pupils, tremor, deep tendon hyper-reflexia, and flushed skin with diaphoresis (4) High cannabis customers have as much dopamine in comparison to non-users (5) Long-term use of Cannabis, revamp the balance of brain dopamine (6) Drug abuse increase phasic dopamine events, which theoretically promote drug seeking (7,8) Disrupting endocannabinoid signaling, prove to be good achievement in addiction treatment (9,10). Two CB-specific receptors have been identified and there is evidence of at least one additional subtype (11).

The CB1 receptor subtype is primarily located in CNS, whereas the CB2 receptor subtype is found mainly in the periphery (12) The complexities have negative values comparing the effects of various cannabis products on THC bioavailability, pharmacokinetics and pharmacological effects (13).

Cannabis principally influence on brain development, (14, 15).

Chronological record of significant events

Cannabis Sativa is known for many decades first in 1964: structure of d-9-tetrahydrocannabinol (THC) was determined and in 1990:

Rimonabant (Acomplia), a CB1 receptor blocker is developed Rimonabant-SR141716, the first cb1 antagonist reported. Chinese Emperor Shen Nung- recommended its use for a variety of ailments 2400 BC.1899- Cannabinol isolated from cannabis resin.

It has also been prescribed for: glaucoma, anxiety, depression, anorexia, frequent

nausea or pain, and Irritable Bowel Syndrome.

After smoking, marijuana discharge cannabinoids, in turn act as neurotransmitters in our brain. The Cerebellum controls in coordination.

Neurotransmission Signals pass from one neuron to another neuron inside the brain. These signals are translated into thoughts memories, emotions and reactions to the high society. Electric charge passed through neurons. When the signals move into the electric charge, neurotransmitter chemicals are released. These neurotransmitters, at the synapse fire and sends message to the next neuron or stay at resting or sleeping. A change in neurotransmitters can influence thoughts, moods, sensations and access to memory. G proteins intracellular signaling inhibition of adenylyl cyclase decrease in cyclic adenosine monophosphate.

Stimulation of potassium channels Blockage of N-type calcium channels Inhibits the release of a variety of neurotransmitters- GABA, nor-epinephrine, and acetylcholine Boost the release of brain endorphin neurotransmitters Raise dopamine release in the nucleus accumbency . Biosynthesis of Cannabinoid There are several compounds that are achieved by non-enzymatic modification reactions:

There are only three enzymes with the biosynthesis of cannabinoids 16, 17, 18) Cannabinoid receptor and advanced research There are two cannabinoid receptors: CB1 and CB2 receptors. These receptors have a well define expression profiles: the CB1 is localized in neuronal tissue and the CB2 is found on cells of immune origin.

CB1 and CB2 are both class A (rhodopsin-like) GPCRs. CB1 receptors, situated in the CNS targets: appetite, immune cells, motor activity, pain perception, short term memory, and process of thought, mainly. The CB2 receptors targets adipose tissue, bone, CVS, CNS, eyes, guts, immune system, kidneys, liver, pancreas, reproductive system, respiratory system, skeletal muscle, skin, tumors (19,20,21).

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Review Article

A REVIEW ARTICLE ON CURRENT RESEARCH AND REGULATORY STEPS FOR FURTHER DEVELOPMENT OF CLINICAL TRIALS IN INDIA

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Abstract:

The evolution of clinical research traverses a long and fascinating journey. The recorded history of clinical trials goes back to the biblical descriptions in 500 BC. The journey moves from dietary therapy – legumes and lemons – to drugs. After basic approach of clinical trial was described in 18th century, the efforts were made to refine the design and statistical aspects. Clinical trials hold enormous potential for benefiting patients, improving therapeutic regimens and ensuring advancement in medical practice that is evidence based. Unfortunately, the data and reports of various trials are often difficult to find and in some cases do not even exist as many trials abandoned or are not published due to "negative" or equivocal results. However, this tendency for availability of only selective information from the myriad clinical trials conducted is not commensurate with the practice of "evidence-based medicine". Today, world over, a need has been felt on the imperative for transparency, accountability and accessibility in order to re-establish public trust in clinical trial data. And this would be feasible only if all clinical trials conducted are registered in a centralized clinical trials registry. Registration of trials will ensure transparency, accountability and accessibility of clinical trials.

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A review study on the anti depressant and anti oxidant activities of *pisidum guajava* and *allium sativum*Y. Anil Kumar¹, S. K. Lalitha Lavanya¹, Konda Ravi Kumar², A.Prathyusha¹¹ Department of Pharmacology, Hindu College of Pharmacy, Amaravathi Road, Guntur Andhra Pradesh, India² Department of Pharmaceutical Chemistry, Hindu College of Pharmacy, Amaravathi Road, Guntur Andhra Pradesh, India

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Keywords: depression, anxiety, stress, herbal medicines, neurochemical transmission.

Abstract

When stress affects the body it interferes with physiological functions of the body and other normal functions such as physical and emotional behaviors of the individual and this is associated with the cause of depression, anxiety mental disorders. Here comes the cause of irrational responses of the body system. The different forms of irrational response are the symptoms for depression. Severe depression with significant effect on day to day life is considered as disability. There are so many synthetic medicines that are used to treat depressions they are playing a prominent role in this civilized world with so many adverse effects, in the other hand natural/ herbal medicines are also playing a crucial role with minimum to zero side effects. One of the main causes of depression is oxidative stress, which is a type of imbalance between the production of reactive oxygen species and the anti-oxidant defensive system.

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Introduction

Depression is a life-threatening illness that affects a large number of people. Mood swings, hallucinations, suicidal thoughts, anxiety, and other depravative states of mind, as well as some psychological imbalances, are all caused by changes in chemical mediators in the brain, as well as some biological inheritant. Currently, 35% of the world's population suffers from depression. It is thought to be the leading cause of death, particularly among teenagers. Internal stresses, fluctuations in serum levels of cholesterol, triglycerides, sugar, and coagulation factors are

some of the internal causes linked to depression. Tricyclic antidepressants, lithium salts, serotonin inhibitors, and monoamine oxidase inhibitors are some of the synthetic drugs used to treat depression these days. However, they can cause sleeplessness, dry mouth, constipation, tachycardia, tremors, sedation, insomnia, serotonin syndrome, anxiety, diaphoresis, postural hypotension, blurred vision, Parkinson, and other side effects. The pioneering study of Otto Loewi and other scientists, namely, that chemical transmission is the primary way by which nerves interact with one another, was one of the most significant discoveries in neuroscience. Today, it is widely accepted that pre- and postsynaptic events are tightly regulated and serve as the foundation for central nervous system plasticity and learning (CNS). Chemical transmission necessitates several steps, including neurotransmitter synthesis, storage in secretory vesicles, and regulated release into the synaptic cleft between pre- and postsynaptic neurons, as well as the termination of neurotransmitter action and induction of final cellular responses via various



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RESEARCH ARTICLE

Isolation and Evaluation of Anti-inflammatory activity of Epigallocatechin from *Senegalia rugata* along with PUFAs

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ABSTRACT:

Senegalia rugata (Lam.) Britton & Rose, Synonym: *Acacia concinna* (Wild.) DC., Family: Fabaceae is one of the ayurvedic medicinal plant and commonly known as shikakai. The pods of *S. rugata* are normally used for cleansing of hair naturally due to the presence of higher content of saponins. In this study, we have isolated six compounds consisting of epigallocatechin (monomeric proanthocyanidin) from ethanol extract of *S. rugata* and a mixture of methyl esters of five polyunsaturated fatty acids (PUFA): methyl oleate, glyceryl trilinoleate, methyl linoleate methyl eicosenoate and methyl vernolate from petroleum ether extract of *S. rugata*. The structures of the six compounds were elucidated using ¹HNMR, ¹³CNMR and IR spectral studies. Epigallocatechin has shown significant *in vitro* anti-inflammatory property in a dose-dependent manner using the HRBC membrane stabilization method.

KEYWORDS: *Senegalia rugata*, epigallocatechin, polyunsaturated fatty acids, anti-inflammatory property.

INTRODUCTION:

Senegalia rugata (Lam.) Britton & Rose (syn: *Acacia sinuate* (Lour) Merr.; *Acacia concinna* (Wild.) DC.)¹ is one of the ayurvedic medicinal plants of the Indian subcontinent that belongs to the subfamily Mimosoideae of the family Fabaceae. It is commonly known as shikakai and soap pod as it is orthodoxy used for cleansing of hair as a natural shampoo².

It is most commonly grown in tropical rainforests of Southeast Asia³. The pod extract of *S. rugata* has shown antidermatophytic⁴, antimicrobial⁵, antioxidant, antityrosinase activity⁶, vaccine adjuvant property⁷, chemopreventive⁸ and cytotoxic effect on human peripheral blood mononuclear cells and human HT-1080 fibrosarcoma cells³. The aqueous extract of leaves has exhibited antioxidant, anti-platelet, and antithrombotic activity⁹.

Various compounds have been isolated and characterized from the pods of this plant such as acacic acid lactone, machaerinic acid, and its lactone, sapogenin-B, acacidol¹⁰, acacigenin-B¹¹, and kinmoonosides A, B, C³. Exploring more the therapeutic aspects of *S. rugata*, we conducted phytochemical and biological work on it. In the present study, we have isolated and characterized six compounds consisting of epigallocatechin (monomeric proanthocyanidin) from

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Research Article

Larvicidal activity of isolated fatty acids from *Senegalia rugata* pods

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ABSTRACT

The National Vector Borne Disease Control Programme (NVBDCP), Andhrapradesh, and Guntur municipal corporation, India announced a war against mosquito-borne diseases such as malaria, filariasis, dengue, chikungunya, and encephalitis. The *Senegalia rugata* (Lam.) Britton & Rose, Synonym: *Acacia concinna* (Wild.) DC., Family: Fabaceae is one of the ayurvedic medicinal plants and is commonly known as soap pod and shikakai in India. This research isolated and characterized a mixture of methyl esters of five polyunsaturated fatty acids (PUFA): methyl oleate, glyceryl trilinoleate, methyl linoleate, methyl eicosenoate, and methyl vernolate from petroleum ether extract of pods of *S. rugata* (PESR) and epigallocatechin (EGC) from the ethanol extract of *S. rugata* pods (EESR) using column chromatography, ¹HNMR, ¹³CNMR, and IR spectral studies. The EESR, PESR, and PUFA emulsion (PFE) were evaluated for their larvicidal action against fifty larvae each of four mosquito species as per the guidelines for mosquito larvicidal bioassay, WHO. The LC₅₀ and LC₉₀ values of PFE were 10 ml and 15 ml respectively. The LC₅₀ and LC₉₀ values of PESR were 20 ml and 30 ml respectively. No mortality was observed with the EESR mixture. The result showed the concentration-dependent larvicidal actions of PFE and PESR. The *Senegalia rugata* environmentally friendly alternative in reducing the use of chemicals for mosquito control.

Keywords: *Senegalia rugata*, PESR, EESR, PUFA, Larvicidal

INTRODUCTION

The Guntur district of Andhra Pradesh, India suffering from mosquito-borne diseases in the last year because the climate is best for mosquito breeding (Anonymous 2019). A total of 1905 people were affected with fever and polyarthralgia in Thurakapalem, Dasaripalem, Rayapudi, Chintamotu, Thurupupslem, Donepodi, Vellatara, Kollapalem, Bhatiprolu, Addepalli, Illavare, and Pesarlanka villages of Guntur

district. During September-October 2013, a massive outbreak (with >1000 cases) was reported from Guntur district, with Chikungunya virus (CHIKV) like symptoms (Parashar et al., 2015). The entomologist experts said the high temperature and rainfall in Andhra Pradesh state suitable for mosquito breeding and also, mosquitoes were developed resistance to most of the chemicals such as DDT, Malathion, and Deltamethrin being used against them (Ram

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A Review On Different Methods For Studying Depression In Rodents

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ABSTRACT

Depression refers to a large range of psychological state issues defined by the absence of a positive effect (a loss of interest and enjoyment in ordinary things and experiences), low mood and a variety of associated emotional, cognitive, physical and activity symptoms. Identifying the mood changes between clinically vital degrees of depression (for example, major depression) and people occurring 'normally' remains problematic and it's best to contemplate the symptoms of depression. The identification of major depression relies not solely on its severity however additionally on persistence, the presence of alternative symptoms, and therefore the degree of useful and social impairment. In this review we are discussing about different screening methods to measure the depression like behavior in animals. Finally, these methods are used to measure depression like behavior in anti depression activity.

Key words: Depression, Psychological disorders, Cognitive studies, Screening methods, Impairment

INTRODUCTION

Depression is a state of mental illness. It is characterized by deep, long lasting feelings of sadness or despair. Depression can change an individual's thinking/feelings and also affects his/her social behavior and sense of physical well-being[1].It is an illness that affects both the mind and the body and is alcaeding cause of disability, workplace absenteeism, decreased productivity and high suicide rates[2,3].Depression is the most common psychiatric disorder in general practice and about one in ten patients seen in the primary care settings suffer from some form of depression[4,5].It is an important global public health problem due to both its relatively high lifetime prevalence and the significant disability that it causes.

Depression accounted for 4.5% of the worldwide total burden of disease (in terms of disability-adjusted life years). It is also responsible for the greatest proportion of burden attributable to non-fatal health outcomes, accounting for almost 12% of total years lived with disability worldwide. Without treatment, depression has the tendency to assume a chronic course, to recur, and to be associated with increasing disability over time. Most studies on depression are from the developed world and there are few studies from developing countries.

The World Mental Health Survey Initiative carried out cross-national research in mental health, especially in developing countries. In a study by the World Health Organization (WHO) conducted at 14 sites, the most common diagnosis in primary care was depression[6]. Depression is estimated to affect 340 million people globally [7].

The prevalence of psychiatric disorders is reported to differ between countries and within countries, across various ethnicities[8]. There have been a few population based studies from India but most have been done on selected groups[9,10,11,12,13].

The prevalence of depression in a population based study conducted in urban Pakistan was 45.9%. [13] while in rural Bangladesh, it was reported to be 29%.[14] and in a peri-urban clinic based study in Uganda, it was reported to be 6.1%[15].



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**CURRENT SCENARIO OF PHARMACOVIGILANCE IN INDIA AND
ITS COMPARISON WITH U.S.A. AND E.U**

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ABSTRACT

Pharmacovigilance (PV) is an integral part of the drug regulation system. PV plays an indispensable role in the identification, assessment, and publicizing of adverse drug reactions (ADRs) through various methods. ADRs account for serious harm to the patients and even lead to morbidity and mortality. The PV databases help in the promotion of safe drug use and protection of public health safety. This article compares the PV system in the USA, Europe, and India, highlighting the challenges and future perspectives to be adapted to widen the horizon of the existing PV structure in India. In India, PV programs are still at the dawning stage when paralleled to the other countries. The National Pharmacovigilance Program and the Pharmacovigilance Program of India are the most recent advancements in this field in the country. The USA and Europe have well-established PV systems in place thanks to technological progress and other

resources. India is the largest producer of pharmaceuticals in the world and a major clinical research hub; hence, it requires a more stringent PV setup. With the increase in population and novel drugs in the market each day, there is a need for an effective PV system in India.

KEYWORDS: Pharmacovigilance systems, Legislation, European Union, United States of America, Adverse Drug Reaction; European Medicines Agency (EMA), USFDA, Marketing Authorization Holder (MAH).



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**REGULATIONS AND REGISTRATION PROCESS OF MEDICINAL
PRODUCTS AND MEDICAL DEVICES IN CIS COUNTRIES**

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ABSTRACT

The CIS region has a potential market for India. The registration of the drug products in CIS regions is a challenging task because these countries have no harmonized regulatory organization. The CIS region includes 12 countries such as Russia, Kyrgyzstan, Ukraine, Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan, Armenia, Azerbaijan, Belarus, Georgia and Moldova, which require different regulatory guidelines for medicinal product registration as per their FDA guidelines. The different guidelines for the same region become a challenging task for the manufacturer and exporter. The registration of the same product for different countries of CIS is not possible with the same dossier due to the lack of their regulatory harmonization. These countries obey their country-specific dossier format, so to target these market manufacturers and exporters need to submit different dossier

documents for different countries. But Ukraine and Kazakhstan have harmonization and it varies in Uzbekistan and Tajikistan. Ukraine and Kazakhstan are also imposing strict rules and expecting USFDA level documents for approval. The overall conclusion is that harmonization in CIS is highly imbalanced, which affects both time and cost for product registration. Harmonization is the need of the era for easy product registration, and it will be beneficial for the manufacturer, regulator, importer, exporter, and to access medicines of high public health value.

KEYWORDS: CIS region, drug product, guidelines, harmonization, regulatory, registration.



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**A COMPARATIVE STUDY ON REGULATORY REQUIREMENT FOR
REGISTRATION OF MEDICAL DEVICES IN US, EUROPE AND
CANADA**

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ABSTRACT

The medical device industry in the industry which deals the multiple types of the products covering with the wide range of the applications. As per the safety and effectiveness of the medical devices are important to the human health, the products must be managed by the strict regulations according to the different risk levels. The product life cycle regulatory system will includes the product design, manufacture, premarket gate keeping and the postmarket monitoring as the common framework for the regulations of the medical devices. However the variety and the innovativeness of the medical devices are challenging the present regulatory frameworks. Since, the competent authorities is responsible for the medical devices worldwide keep renewing their regulatory systems to ensure the safety and effectiveness of the medical devices in the United States, Europe and Canada with the

particular focus on the updated regulatory changes in these countries and the current status of the global harmonization on the medical devices.

KEYWORDS:– Safety, Effectiveness, Regulatory reform, IMDRF, Harmonization.

INTRODUCTION

The advent of 1950s and 1960s saw tremendous technological advances thereby giving a fillip to innovation in the field of Pharmaceutical and Medical Device Industry. Today these Industries are estimated to worth billions of dollars. Medical Devices have enhanced the quality of healthcare at our disposal by making diagnosis, prevention and treatment of



Marketing Authorization and Pharmacovigilance Plan of the Eu Regulatory Network for Covid-19 Vaccines

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ABSTRACT: An internal single market has been developed by the EU through a standardized system of laws that apply in all member states in those matters, and only those matters, where members have agreed to act as one. This article discusses about the marketing authorization procedures of European Union (EU) and the ways, procedures, criteria and conditions for marketing authorization of Covid-19 vaccines in EU. It also states about the requirements for applying for Conditional marketing authorization. This article also describes about the Pharmacovigilance plan of the EU regulatory network for Covid-19 vaccines.

KEY WORDS: European Union, Marketing Authorization, Authorization procedures, Conditional Marketing Authorization, Pharmacovigilance plan.

1. INTRODUCTION:

The European Union (EU) highly regulates the Medicinal products which are subjected to a separate and complex system of approvals that administers how, when, where, and in what form such products will be permitted to be sold within the boundaries of the EU.

The European Union (EU) is a political and economic union which consists of 27 member states that are found fundamentally in Europe. An internal single market through a standardized system of laws has been developed by The EU in all member states in those matters, and only those matters, where individuals have consented to act as one.

A network of around 50 regulatory authorities from the 31 EEA countries (28 EU Member States plus Iceland, Liechtenstein and Norway), the European Commission and EMA is the base for The European medicines regulatory

system. This network is the thing that makes the EU regulatory system extraordinary.

The European Medicines Agency (EMA) is an organization of the European Union (EU) responsible for the assessment, supervision and oversight of the medicinal products. Preceding 2004, it was known as the European Agency for the Evaluation of Medicinal Products or European Medicines Evaluation Agency (EMEA).

The regulation of medicinal products is administered in the EU/EEA by Directive 2001/83/EC.

A firm or organization proposed to market their medicinal products within the European Economic Area should first get the marketing authorization from a competent authority of a Member State of European Union (EU) or European Economic Area (EEA country) or when an authorisation has been allowed as per Regulation (EC) No 726/2004.

In the centralized procedure the scientific evaluation of applications for European Union marketing authorizations for human and veterinary medicines are carried out by the European Medicines Agency [EMA]. The pharmaceutical companies submit a single marketing – authorization application to the EMA under the centralized procedure. A centralized marketing authorization once granted by the European commission is valid in all European Union (EU) member states, as well as in the European Economic Area (EEA) countries.

Scientific committees, which are made up of members from EEA countries, as well as representatives of patient, consumer and healthcare – professional organizations carry out the majority of the EMA'S scientific evaluation work.



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Regulatory considerations for emergency use authorizations of medical products U/S 564 of the federal food drug and cosmetic act, USA

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Abstract

The United States (US) remains the greatest medical device (MD) market on earth \$156 billion (40 percent of the overall MD market in 2017). By 2023, it is depended upon to create to \$208 billion. As per USFDA, the MD are orchestrated into three classifications. The U.S. Food and Drug Administration's and Center for Devices and Radiological Health (CDRH) supervises MD advertised in the United States. The United States Federal Food, Drug, and Cosmetic Act (abbreviated as FFDCA, FDCA, or FD&C) is a group of laws passed by Congress in 1938 offering power to the U.S. Food and Drug organization (FDA) to administer the safety of food, drugs, cosmetic products and MD's. An Emergency Use Authorization (EUA) under Section 564 of the FD&C Act considers the unique utilization of medications and other clinical products during particular kinds of crises. This review articles focused the process of EUA of medical products u/s 564 of the Federal Food Drug and Cosmetic Act, USA.



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1. Introduction

1.1 Medical Device Industry in USA

The US MD making market is assessed at USD 176.7 billion out of 2020 and is relied upon to arrive at USD 186.5 billion of every 2021. The US clinical supplies and device producing industry incorporates around 11,000 organizations with consolidated yearly pay of \$75 billion. Significant organizations incorporate Johnson and Johnson, GE Healthcare, Siemens Medical Systems and Medtronic. The business is profoundly thought with the 50 biggest organizations representing around 75% of income. The extent of the accompanying investigation includes medical stock and device makers that produce ophthalmic, careful and dental instruments and supplies utilized in the clinical field [1].

1.2 Opportunities in the US market

The United States has an exceptionally enormous maturing populace and a long history of ongoing sickness. Moreover, the Patient Protection and Affordable Care Act of 2010 expanded admittance to medical care administrations for areas of the populace that were beforehand uninsured. Accordingly, there is a requirement for savvy MDs to satisfy the expanding need for care, the expense imperatives of the new medical care framework, and control the rising medical care spending [2].

1.3 Key players in US medical device manufactures market

A portion of the vital participants working in the U.S medical device makers market incorporate 3 Abbott Laboratories, M Healthcare, Boston Scientific Corporation, Baxter International, Johnson and Johnson, GE Healthcare and Medtronic [1].

2. Regulations of Medical products in the United States

Medical Products implies all clinical and medical services items including however not restricted to mechanized wheelchairs and other versatility items and hardware for use by people with incapacities and additionally for home medical care.

2.1 Classification of Medical Products

Table1: Classification of Medical Products

Class	Risk Level	Device Examples
A	Low risk	Tongue depressors, Surgical retractors
B	Low Moderate risk	Suction equipment, Hypodermic needle
C	High risk	Orthopaedic implants, Lung ventilator
D	High moderate risk	Implantable defibrillator, Heart valves

2.2 Classification of medical devices in United States

The FDA has set up groupings for roughly 1,700 diverse generic sorts of MD's and gathered them into 16 clinical fortes alluded to as boards. Every one of these conventional kinds of MD is appointed to one of three administrative classes dependent fair and square of control important to guarantee the safety, performance and viability of the MD. The three classes and the prerequisites which apply to them are:

Device Class and Regulatory Controls

Class I General Controls: With or without exemptions

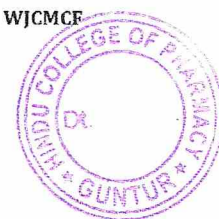
Class II General Controls and Special Controls: With or without exemptions

Class III General Controls and Premarket Approval

[116]

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REGULATORY REQUIREMENTS FOR EU MEDICAL DEVICE LABELING – NEW CHANGES

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ABSTRACT

Medical equipment labeling is any data related to equipment focused on the patient. It is planned to help guarantee that the equipment is utilized safely, effectively, and successfully. The primary purpose of supplying these labels is to assist the target peoples about the usage and applications without the intervention of healthcare professionals or physicians. To produce the quality standards in labeling as per European Union (EU) medical device regulations (MDR), the present article may help the manufacturers in their development. The article is drafted according to the EU MDR 2017/745.

INTRODUCTION

1.1 European Union:

The European Union (EU) is a political and financial association of 27 parts found principally in Europe. Its individuals have a joined region of 4,233,255.3 km² (1,634,469.0 sq mi) and an expected all-out populace of around 447 million. The 27 section states of the EU includes Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland. The euro (€) is the authority cash of 19 out of 27 EU nations. These nations are aggregately known as the Eurozone. The banner utilized is the Flag of Europe, which comprises a circle of 12 brilliant stars on a blue foundation. Initially planned in 1955 for the Council of Europe, the banner was received by the European

Communities, the archetypes of the current Union, in 1986. The Council of Europe gave the banner a representative portrayal in the accompanying terms, though the authority emblematic depiction embraced by the EU overlooks the reference toward the "Western world." [1]

1.2 Label and Labeling concepts:

As per Article 2 of EU MDR 2017/745 [2], 'Label' means the written, printed, or graphic information appearing either on the device itself or on the packaging of each unit, or on the packaging of multiple devices. "Labeling" includes all written, printed, or graphic matter accompanying an article at any time while such article is in interstate commerce or held for sale after shipment or delivery in interstate commerce [3, 4].



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Technical documentation requirements for medical devices approval in European Union and a detailed emphasis on air-way products

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Abstract

The technical documentation to be drawn up by the maker ought to be introduced in an unmistakable, coordinated, promptly accessible, and unambiguous way. It will remember for specific the components recorded as per Annex II of EU MDR 2017/745. The Air-Way is the way that air follows to get into and out of the lungs. There are a few kinds of Air-way devices are there on the lookout. New items will conceivably further develop patient prosperity altogether however will require sensible administrative control to boost the advantages. The orderly methodology is planned on a central theoretical level that underlies the substantial necessities that could be changed during the years to follow. The current article gives an itemized accentuation on Air-way items and their tech documentation necessities.

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Introduction

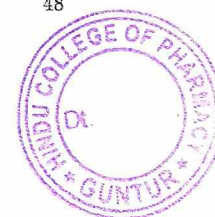
1.1 European Union

The European Union (EU) is a political and financial association, comprising of 27 part expresses that are dependent upon the commitments and the advantages of the participation. Each part state is essential for the establishing deals of the association and is exposed to restricting laws inside the normal authoritative and legal organizations. All together for the EU to take on strategies that worry safeguard and international concerns, all part states should concur consistently [1]. European Union are advance harmony, its qualities and the prosperity of its residents, offer opportunity, security and equity without inward boundaries, feasible improvement dependent on adjusted financial development and value strength, an exceptionally

aggressive market economy with full business and social advancement, and natural assurance, battle social avoidance and separation, advance logical and mechanical advancement, upgrade monetary, social and regional attachment and fortitude among EU nations, regard its rich social and phonetic variety, build up a financial and money related association whose cash is the euro. The EU is focused on aiding casualties of man-made and cataclysmic events worldwide and upholds more than 120 million individuals every year. By and large, the EU and its constituent nations are the world's driving. Each EU nation is interesting. This implies that total national output (GDP) and populace development for instance can be altogether different starting with one country then onto the next. Every nation likewise has its own way to deal with key strategy regions like instruction. Training expands the abilities of the labor force and places them in a superior situation to adapt to expanding worldwide rivalry. The measure of cash every nation spends on schooling changes [2].

1.2 Medical device

As per Article 2, 'Medical device' means any instrument, apparatus, appliance, software, implant, reagent, material, or other article intended by the manufacturer to be used, alone



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Unlike previous outbreaks like SARS and MERS, caused by corona family viruses, COVID-19 became a much worse worldwide pandemic. SARS-CoV-2, another coronavirus, causes it. Finding effective therapeutics against this global health crisis became a significant challenge for researchers. However, Allopathic medicine is effective to some extent with severe side effects, which cause concern. In this process, some researchers focused on natural compounds like plant-synthesized secondary metabolites (PSMs) for the treatment of COVID-19. Because these natural compounds like PSMs had a history of tackling a wide range of viral pathogens successfully without significant side effects. Many medicinal plants from different families have antiviral activities. This review intends to systematically evaluate the natural metabolites that could be used against this new disease looking at their natural sources, mechanism of action, and previous pharmacological usages. So, it can be a good initiation for the greater goal of finding effective natural therapeutics for the treatment of Covid-19 without any severe side effects.

INTRODUCTION

Among all countries United States, Brazil, Mexico, India, UK have reported highest deaths. As the number of infections and deaths from Covid -19 continue to rise, researchers are working to identify suitable treatments and vaccines to curb the pandemic. Initially when COVID-19 started and proper information is unavailable regarding COVID-19, many treatment options are tried and tested to cure the disease.

Here in this article, we have discussed about various natural compounds from different parts of the world regarding their origin, mechanism of action, merits & demerits in controlling COVID-19. Apart from allopathic medicine certain natural compounds might be effective for the treatment of COVID-19 based on general concepts from previous experiments. Let us discuss about few of them.

It is most popular in Europe and North America. Its common name is purple coneflower. The preparation is made in the form of sprays, teas, tinctures, extracts. Many Native Americans use this for respiratory infections. It contains bioactive compounds like chicoric acid, alkyl amides and caffeic acid. Viruses with membranes are very sensitive to *E. Purpurea* extract. Since SARS - CoV-2 is an enveloped virus; it has promising result against COVID-19. Whether *Echinacea purpurea* is immunostimulatory (or) Immunosuppressor is still debatable. But it definitely had virucidal effect.^{13,24}

It is extract of turmeric plant. Turmeric plant belongs to Zingiberaceae (ginger) family and curcuma genus. Turmeric plant also known as *Curcuma longa*²⁵. *Curcuma longa* extracts contains curcuminoids like Curcumin, Demethoxy Curcumin and Bisdemethoxy Curcumin. Some studies showed that Curcumin had anti-inflammatory effect via inhibition of toll - like receptor (TLR - 4), Phosphatidyl inositol - 3 kinase (PI3K), nuclear factor - Kappa B (NF - K β). It decreases the production of IL - 6 and tumor necrosis factor (TNF - α), IL - 1 β etc. It helps in COVID-19. But another study showed that Curcumin causes hyper inflammatory state; so more detailed study is needed to clarify the effect of Curcumin²⁶.

Bark of cinchona trees produces quinine alkaloids which is effective against malaria. Nowadays quinine sulphate has become one of the most wanted drugs for COVID-19. A clinical trial proved that quinine in combination with Azithromycin decreases the SARS-CoV-2 viral loads and have beneficial effects against COVID-19. Quinine inhibits the viral infection by interfering with virus replication, activating protein heat shock response.



**EFFICACY OF PERI-OPERATIVE ADMINISTRATION OF
PRUCALOPRIDE IN ASSESSING POST-OPERATIVE BOWEL
MOVEMENTS: A PROSPECTIVE COMPARATIVE STUDY**

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ABSTRACT

Aim: There is an extensive literature on the post operative bowel movements after abdominal surgeries. There are, however, few studies investigating the effect of prucalopride to treat post-operative constipation. The aim of the study is to identify the effectiveness of Peri-operative administration of prucalopride in assessing post-operative bowel movements after hernia repair surgery. **Materials and Methods:** The surgeon-blinded prospective randomized controlled study included 50 hernia repair surgery patients between the ages of 18 and 80. The patients were randomized into two groups: those who had prucalopride peri-operatively (n=25) and those who did not take

prucalopride peri-operatively (n=25). The outcome measures were post operative first bowel movement, length of hospital stay, additional laxative need, adverse effects of the drug.

Results: Among 50 patients, 28 patients were males (56%), 22 patients were females (44%). 2mg and 1 mg dose of prucalopride were given to 25 patients and the remaining half are taken without prucalopride. Out of 25 patients who Peri-operatively took prucalopride, 1 patient passed bowel on surgery day, 6 patients on day one after surgery and 18 patients on the second day after surgery without any complications and got discharged early. Whereas the 25 patients without prucalopride 2 patients passed bowel on day two after surgery, 5 patients on day three and 14 patients on day four, 4 patients on day five after surgery passed the bowel experiencing the complications of constipation and had delayed discharge from the



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MEDICAL EXPULSION THERAPY

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INTRODUCTION

Ureteric colic is defined as episodic severe abdominal pain from sustained contraction of ureteric smooth muscle as a kidney stone passes down the ureter into the bladder.^[1]

After clinical assessment and stone localisation by non-contrast CT of the kidneys, ureters, and bladder (CT KUB), patients can generally be managed at home with analgesia with the expectation of spontaneous stone passage.^[2]

Symptoms

The most common symptom of a kidney or ureter stone is pain.^[3]

You might feel pain in your lower abdomen or your flank, which is the area of your back just under your ribs.^[1]

The pain can be mild and dull, or it can be excruciating.^[4]

The pain may also come and go and radiate to other areas.^[11]

- Other possible symptoms include:
- Pain or a burning sensation when you pee^[2]
- Blood in your urine^[7]
- Frequent urge to urinate^[1]
- Nausea and vomiting^[6]
- Fever^[1]



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COMPARISON OF EFFECTIVENESS OF ETODOLAC AND NAPROXEN IN THE TREATMENT OF KNEE OSTEOARTHRITIS: A RANDOMIZED, PROSPECTIVE, OPEN LABEL PARALLEL STUDY

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ABSTRACT

Objective Osteoarthritis (OA) is a chronic progressive degenerative disease of weight bearing joints and leading cause of disability in elderly. Current medical management of OA is mostly with non-steroidal anti-inflammatory drugs (NSAIDS) being the main stay of therapy. The main aim of the study is to estimate the effectiveness of naproxen and etodolac in the treatment of knee osteoarthritis. Materials and methods The efficacy and safety of etodolac and naproxen were compared in a double blind randomized, parallel group out patient study conducted in 100 patients of OA of knee joint diagnosed according to American college of rheumatology criteria. after obtaining the informed consent the subjects were randomized into two

groups: those who has etodolac 400mg b.i.d. d (n=50) and those who Had naproxen 500 mg b.i.d. d (n=50). the data were tabulated and analysed using paired a t test and coefficient of variation and significance was determined by its P value. Results Among 100 patients 32 subjects were males (32%) ,68 subjects were females (68%). after 3 weeks of treatment, pain intensity and functional indices in terms of visual analogue scale (VAS) and western Ontario and McMaster universities osteoarthritis (WOMAC) score were significantly better in etodolac as compared to naproxen along with less rate of side effects Conclusion It was



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COMPARATIVE EVALUATION OF EFFICACY OF HYDROXYCHLOROQUINE VERSUS METHOTREXATE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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ABSTRACT

Aim: The aim of the study is to compare the efficacy of Methotrexate(MTX) versus hydroxychloroquine(HCQ) in patients with Rheumatoid arthritis. **Materials and methods:** This prospective study involves 100 patients who were diagnosed with rheumatoid arthritis and those who met the study criteria were enrolled for the study. Relevant data such as demographic details, past medical history, drug name were collected from out-patient profile form and by patient interview. **Statistical Analysis:** All the raw data was collected, entered in Excel sheet 2010 in windows 10 version, the statistical analysis was done in SPSS 16.0 Software by an appropriate statistical method, paired sample T-test for knowing the significant p-value <0.05 (confidence interval 95%). **Results:** Among 100 patients, 50% of patients have received the drug, Hydroxychloroquine(HCQ) (400 mg/day p.o), 50% patients have received the drug, Methotrexate(MTX)(15 mg/week in divided doses p.o). The study shows that Hydroxychloroquine group having remission rate of 4% (2 patients out of 50) with the remission value <2.6 and shown to be significant with p value < 0.05. Methotrexate group being assessed having remission rate of 8% (4 patients out of 50) with the remission value of <2.6 which is found to be statistically significant (p<0.05) and there is significance decrease in Erythrocyte sedimentation rate(ESR). **Conclusion:** In our study we have observed that methotrexate was more effective in managing rheumatoid arthritis when compared to hydroxychloroquine by comparing the DAS28 score of both groups. Pain and inflammation also reduced by avoiding further exacerbation of condition.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic, systemic autoimmune disease that characterized by inflammatory arthritis resulting in pain, swelling, and stiffness in the joints, and may cause severe joint damage, loss of function and disability. The disease may last from months to a lifetime, and symptoms may improve and worsen over time.^[1] It is estimated to have a prevalence of about 1% of the population in India. It affects roughly three times as many women as men. People tend to develop rheumatoid arthritis between 40 and 60 years of age, although it can arise at any age.^[2]

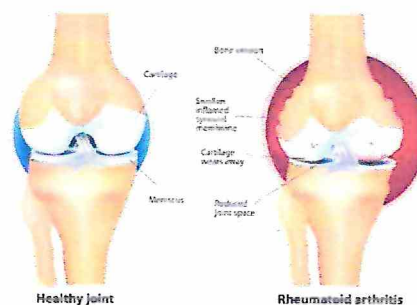


Fig. 1: Healthy joint and Rheumatoid arthritis affected joint.

Rheumatoid arthritis (RA) if left untreated, ultimately causes functional impairment.^[3] Non-steroidal anti-inflammatory drugs (NSAIDs) help only in symptomatic relief, corticosteroids have problems with chronic use and disease-modifying anti-rheumatic drug (DMARD)

**DETERMINATION OF SAFETY AND EFFICACY OF HARPAGOSIDE
WITH DICLOFENAC IN POST OPERATIVE PAIN MANAGEMENT: A
PROSPECTIVE COMPARATIVE STUDY**

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ABSTRACT

Background information: Due to the low rate of complete recovery from postoperative pain after surgeries shows significant impact on the health and quality of life of patients and their families by causing pain, loss of function and mobility, depression, distress and anxiety, financial burden and prolonged hospital stays. Evidence suggests that postoperative pain impose significant and underappreciated burden to the individual, the healthcare system and the society as a whole. Harpagoside dose is 5mg which is available in capsule form. In this study, oral dosage form of harpagoside was used to determine its effect in the postoperative pain management of acute and chronic pains after

surgeries. **Materials and methods:** It is an comparative study which involves 50 patients suffering from postoperative pain and were divided into 2 cohorts (test harpagoside and control-diclofenac). Visual analogue scale was used for the comparison of pain management in test and control groups in postoperative pain management. **Results:** Out of 50 subjects taken 25 subjects are treated with harpagoside and 25 subjects are treated with diclofenac. Of the 50 subjects taken 25 subjects are males and 25 subjects are females. Of 25 Subjects treated with harpagoside 10 subjects were discharged on day 3 which is early, 14 subjects are discharged on day4 and 1 subjects was discharged on day 5 without any complains of pain. Of 25 subjects treated with diclofenac 1 subject was discharged day 4, 12 subjects were discharged on day 5, 3 subjects are discharged on day 6 and 5 subjects are discharged on day



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Review Article

Open Access

Brief review on remdesivir

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Abstract

Remdesivir is an investigational broad-spectrum small-molecule antiviral drug that has confirmed interest in the direction of RNA viruses in numerous families, which encompass Coronaviridae (alongside aspect SARS-CoV, MERS-CoV, and lines of bat coronaviruses able to infecting human respiratory epithelial cells), Paramyxoviridae (alongside aspect Nipah virus, respiratory syncytial virus, and Hendra virus), and Filoviridae (alongside aspect Ebola virus). Originally superior to cope with Ebola virus infection, remdesivir is a prodrug of the determine adenosine analog, each of which can be metabolized into an energetic nucleoside triphosphate (NTP) via the host. The determine nucleoside, GS-441524, has displayed antiviral interest within the direction of SARS-CoV, Marburg virus, and pussycat infectious peritonitis virus, amongst others. A fashion of research have tested the effects of these pills on coronaviruses (CoVs) each in vitro and in vivo the use of mouse and non-human primate animal models.

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Introduction

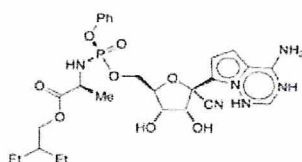


Fig 01: Chemical Structure of remdesivir

Molecular Formula-C₂₇H₃₅N₆O₈P

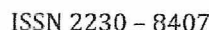
Remdesivir may be a group organic compound owing to the formal condensation of the carboxy organization

organisation of N-[(5)-(phenoxy)phosphoryl]-L-alanine with the chemical group organization organisation of 2-ethylbutan -1- ol. COVIFOR is Associate in Nursing infusion resolution containing Remdesivir. Remdesivir is Associate in Nursing investigational medicament accustomed address superb folks with COVID19 withinside the clinic. Remdesivir stays being targeted with so-referred to as analysis medication. As of now, there area unit confined statistics on the security and pertinency of mistreatment Remdesivir to address patients in COVID19 clinical clinics. consistent with preliminary medical results, Remdesivir has been incontestable to shorten the chances of restoration for a few people. The FDA-large medication for the treatment of COVID19 area unit protected and powerful [1].

Therefore, the bureau has approved the employment of Remdesivir for the crisis use of COVID19 beneath the



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Research Article



Digestive Activity of Pancha Harithakadi Churna

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ABSTRACT

The traditional systems of medicine are really effective but the problem with them is they lack in quality assurance. Standardization is the need of the hour in ayurvedic system of medicine. PanchaHarithakadi Churna (PHC) is a traditional polyherbal formulation which consists of five household ingredients used for indigestion. It is mainly used for Constipation and Bloating. Churna's will play a major role in gastro intestinal problems and they have greater bioavailability because of smaller particle size. It consists of fine powder (sieve 100 size) of ginger rhizomes, fennel fruits, myrobalan fruits, senna leaflets and pink rock salt in equal proportions (1:1:1:1:1) are mixed well. PHC was formulated by standard procedures and evaluated by microscopic characterization, inorganic analysis and digestive studies. Microscopical characters indicate the presence of genuine crude drugs used in the formulation. Inorganic analysis shows the presence of calcium, magnesium, sodium, chloride and phosphate. The PHC showed pronounced amylolytic activity and trypsin activity whereas moderate lipolytic activity, proteolytic activity and pepsin activity, mild chymotrypsin activity in treating indigestion. In future we will carry out in vivo digestive studies.

Keywords: PHC, Digestion, Inorganic analysis, Enzymes, Ayurveda.

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INTRODUCTION

Ayurvedic formulations have numerous uses in Ayurveda. They help to rectify the three doshas in the body.¹ In the last few decades, there has been an exponential growth in the field of ayurvedic medicine. There are great need of standardization and quality control of ayurvedic formulations. The CCRAS and WHO has introduced certain standards and guidelines to maintain uniformity between the production batches. Good manufacturing practices and quality control of the ingredients and products can result in ensuring quality assurance of the formulation.²

The present study is to formulate and standardize PHC, which is used to treat gastrointestinal problems. The churna is evaluated by microscopic evaluation, inorganic analysis and digestive studies.

MATERIALS AND METHODS

Preparation of Churna

The raw materials such as Ginger rhizomes (1part), Fennel fruits (1part), Myrobalan fruits (1part), Senna leaflets

(1part) and Pink Rock salt (1part) were used for the preparation of PHC. The raw materials of PHC were purchased from the market and authenticated by the Botany Department of Hindu College based on their microscopical characters of powdered drugs. All the ingredients were powdered separately, passed through sieve number 100 and mixed together in specified proportions. The churna was packed in an air tight glass container.³

Standardization Parameters

The PHC was standardized by microscopic evaluation, inorganic analysis and digestive studies.

Determination of Microscopic Evaluation

All the ingredients were powdered and their microscopical characters were observed as shown below.^{4,5}

Determination of Inorganic Analysis

Take the ash of PHC, add 50%v/v HCl or 50%v/v HNO₃ then kept for 1 hour or longer and filtered. By using filtrate we can perform the following tests.⁶

1. Tests for Calcium:

- (a) To 10mL of filtrate, 1 drop of dil. NH₄OH and saturated ammonium oxalate solutions were added, white precipitate of calcium oxalate was formed which was soluble in HCl but insoluble in acetic acid.
- (b) Ammonium carbonate solution gives white precipitate which was insoluble in NH₄Cl solution.



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Phytochemical Investigation and In Vivo Antiurolithiatic Activity of *Merremia Emarginata* (BURM.F.) Hallier F.

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ABSTRACT:

Kidney stone disease, also known as nephrolithiasis or urolithiasis. A solid piece of material develops in the urinary tract brings about pathological condition. The main aim of the work done by the authors was to carry out the phytochemical investigation and In vivo Antiurolithiatic activity of *Merremia emarginata* in experimental animal models. Phytochemical investigation of *Merremia emarginata* aqueous extract disclosed the presence of Principle constituents Flavonoids, Phenols, Tannins, Alkaloids and Saponins. One or more chemicals may be responsible for the distinct pharmacological activity. Ethylene glycol (0.75% v/v) induced Urolithiasis models were used for current study. Group I (normal control) served with regular diet and drinking water ad libitum. Groups II-V fed Ethylene glycol (0.75%) in drinking water throughout the experimentation period (28 days) to induce lithiasis. Group II (disease control) left for induction of calculus. Group III served with Standard, Cystone (750mg/kg Body weight) from day 14 to day 28. Groups IV and V served with test samples of AQME extract (250 and 500 mg/kg, respectively) once in a day orally from day 1 to day 28. As a part of experimental analysis both urine and serum samples were collected on day 14 and day 28. Serum samples were analyzed for calcium, Phosphate, uric acid, urea, magnesium contents. Whereas urine samples were analyzed for oxalate, uric acid, citrate, creatinine, calcium, magnesium and Phosphate. Results stated that AQME (250 and 500 mg/kg) and Cystone (700 mg/kg) group exhibited significant ($p < 0.001$) rise in urine output, urinary pH & considerable reduction in stone size as compared to disease group on 28th day of experimentation. AQME at both 250 and 500 mg/kg showed significant dose-dependent Antiurolithiatic activity (considerable reduction in stone size).

Key words: AQME-Aqueous extract of *Merremia emarginata*. In vivo antiurolithiatic activity, Cystone

I INTRODUCTION

Kidney stones typically form in the kidney and leave the body in the urine stream. A small stone may pass without causing key symptoms. If a stone grows to more than 5 millimeters, it can cause blockage of the ureter, resulting in severe pain in the lower back or abdomen. A stone may also result in blood in the urine, vomiting, or painful urination. Stone formation is also caused due to imbalance between promoters and inhibitors. The rate of occurrence is three times higher in men than women, because of enhancing capacity of testosterone and inhibiting capacity of estrogen in stone formation [1]. Stone formation is affected by various factors such as metabolic disorders, stress and certain medication. Urine when supersaturated with Calcium oxalate which means that it will contain Calcium oxalate crystals that form spontaneously called nucleation of Calcium oxalate crystals. Their size must be controlled to prevent retention in ducts and the eventual development of lithiasis. This is achieved in part by specific inhibitory effect on crystal growth [2]. Throughout history, every civilization in the world used plants or their derivatives for treatment or prevention of diseases. In many countries throughout the world, herbal medicines are broadly used in the treatment of wide range of diseases including urological diseases [3]. *Merremia emarginata* Burm.f. belonging to the family Convolvulaceae is a perennial, much branched Creeper [4]. *Merremia* is a genus of flowering plants in the morning glory family. Members of this genus are commonly known as wood roses [5]. It is a perennial, prostrate plant with slender stems 30-75cm long that usually form roots at the nodes. The plant was studied for diuretic, laxative and purgative properties & is used in the treatment of

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Research Article



Phytochemical Screening and Antibacterial Activity of Grape Seed Extract

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ABSTRACT

In the present investigation, preliminary phytochemical screening and antibacterial activity of diethyl ether, methanol and aqueous Grape seed extracts were examined. The phytochemical analysis revealed the presence of active ingredients such as flavonoids, phenols, terpenoids, saponins in Grape seed extracts. The antibacterial activity was performed by agar-well diffusion method using different solvent extracts. Three bacterial pathogens such as gram positive- *Streptococcus pyogenes* and gram negative- *Pectobacterium carotovorum*, *Pseudomonas putida* were used as test organisms. Among the three solvents used methanolic extract was found to be more active against tested pathogenic bacteria, as they showed potential phytochemical constituents. Among all the tested organisms *Streptococcus pyogenes* was found to be more sensitive by all the extracts. The results of present study supports the usage of Grape seeds and also suggests that methanolic grape seed extract possess compounds with antimicrobial property that can be used as antimicrobial agent for the therapy of infectious diseases caused by pathogens.

Keywords: Grape seed extract, Phytochemical screening, Antibacterial activity, Agar-well diffusion method.

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INTRODUCTION

Plants play a major role in traditional medicine system for health care. The abundance of plants on the earth's surfaces has led to the growing interest in correlating phytochemical constituents of a plant with its pharmacological activity.¹ Plants have been considered as rich sources of natural phytochemicals which are having more biological activities. Grapes, one of the most popular fruits and the most widely cultivated crop throughout the world, contain large amounts of phytochemicals including anthocyanins and resveratrol, which offer health benefits.² Grapes are one of the major dietary sources of anthocyanins, which are responsible for the colouring of black, red and purple grapes; however, they are lacking in white grapes.

The bioactive compounds present in plants like alkaloids, flavonoids, tannins and phenolic compounds are the reason for their medicinal value that produce a definite physiological action on the body.³ Now a day's people are using natural phytochemicals instead of synthetic drugs. Herbal medicines have received much attention as sources of lead compounds since they are considered as time tested and relatively safe for both human use and

environment friendly.^{4,5} They are cheap, easily available and also affordable. Antibiotics shows some side effects like allergic reactions, disturbances of normal flora of intestine. Therefore, there is a need to develop alternative antimicrobial drugs for the treatment of infectious diseases.

Plant diseases are controlled by different fungicides and bactericides, which have vast utilization in the field of agriculture. It has been a subject of public concern due to the harmful effects on the ecosystem and their carcinogenic quality. Hence bioactive compounds from plant extracts can be an alternative against pathogens. The beneficial health-related effects of phenolics in grapes are of important to consumers, breeders and the grape industry. Keeping this in view, an attempt was made to explore its phytoconstituents and to determine the potential antibacterial activity of Grape Seed Extracts.

MATERIALS AND METHODS

Preparation of Grape Seed Extract (GSE)

Fully ripened black grapes were purchased from a local shop in market of Guntur city. The seeds were separated from the grapes by crushing. The separated seeds were washed with distilled water and dried in an oven at 60°C. Dried seeds were powdered using a blender. 25g of accurately weighed grape seed powder was treated with 100 ml of diethylether, methanol and aqueous solvents in a conical flask and stirred well. The flasks were left aside for 48 hours and occasionally stirred. Filter the contents of flask through Whatman No. 1 and evaporated to dryness at 50°C in an oven.⁶



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Research Article



Screening, Isolation and Biochemical Characterization of Laccase Producing Bacteria from Contaminated Sites

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ABSTRACT

Screening and isolation of Laccase producing bacteria from Guntur District soil was carried out to assess the diversity of Lignocellulose degrading bacteria. Isolation and identification of environmental friendly bacteria for lignin degradation becomes an essential one, because all the researchers are mainly concentrating on fungal strains. However, bacteria seem to play a leading role in decomposing lignin. For isolation of Laccase producing bacteria nutrient agar medium containing guaiacol was used. Total nine bacterial strains were isolated from soil samples collected from different regions of Guntur district. Preliminary screening of bacterial strains was carried out on guaiacol containing nutrient agar medium for laccase production. Formation of green colour using ABTS (2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonate) confirms the capability of laccase production by the bacterial strains. Nine bacterial strains showed positive results. High laccase producing bacterial isolates were examined for morphological and biochemical characteristics according to Bergey's Manual of Systematic Bacteriology. The predominant isolates were identified as *Bacillus* and *Enterobacter* species.

Keywords: Lignin degrading bacteria, ABTS, Laccase, Guaiacol, Nutrient agar medium.

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INTRODUCTION

Laccases (Benzenediol: oxygen oxidoreductases; EC 1.10.3.2) are a versatile oxidoreductase enzymes, are also called as "BLUE ENZYMES" because they are multinuclear copper containing enzymes.¹ Laccases are having the capability to oxidize a wide range of phenolic and nonphenolic compounds by converting oxygen molecule to water on concomitant four-electron reduction.²

Laccases are abundantly present in various fungi and higher plants. It is mainly produced from fungi, especially white rot, and has been extensively exploited for the application in industrial processes due to their high redox potential.

The commercial production of fungal laccases is usually hindered due to high fermentation period, low laccase yield and also their applicability only under mesophilic and acidic reaction condition. Majority of the industrial operations are carried out in extreme conditions, i.e., higher temperature, pH and high salt concentration. Fungal laccase generally fails to work in these extreme

environments.^{3,4} Moreover, bacterial laccases have some additional advantages because of their cost-effective use in industrial applications, which include broad substrate specificity, enzyme production in a short time, thermostability and easy to clone and express in the host with suitable manipulation.⁵

Bacterial laccases are useful in pulp and paper biobleaching, degradation of dyes, textile industry, pollutant degradation and biosensor development.⁶ Laccase is a substrate-specific enzyme and in general, it oxidizes a wide range of substrates such as phenolic compounds, phenylpropanoids, azo dyes and indigo dyes.⁷ Phenolic compounds such as hydroquinone and catechol are good substrates for the majority of laccases; moreover, methoxy-substituted phenolic compounds, syringaldazine, guaiacol and DMP (2,4-di-methoxy phenol) are commonly used substrates.⁸

There are two types of laccases, true laccase and false laccase. Laccase which shows activity with tyrosine is called false laccase and that which does not show activity is called true laccase. Till date, blue laccase is the most studied one in comparison to yellow or white laccase.⁹ First, bacterial laccase from rice rhizosphere was isolated in the year 1993, known as *Azospirillum lipoferum*.¹⁰ Laccase producing bacteria are of mainly Gram positive, e.g., *Bacillus*, *Geobacillus*, *Streptomyces*, *Rhodococcus*, *Staphylococcus*, *Azospirillum*, *Lysinibacillus* and *Aquasalis bacillus*.¹¹ However, some Gram-negative bacteria like *Pseudomonas*, *Enterobacter*, *Delfia*, *Proteobacterium* and *Alteromonas* are also able to secrete laccase.¹²



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