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Abstract Presentations:

(Poster Competition)

One Day National Conference on

"Trends in Chromatography and Spectroscopic Techniques"

6th October 2012

Organized by

Department of Pharmaceutical Chemistry,
R. C. Patel Institute of Pharmaceutical Education & Research,
Near Karwand Naka, Shirpur-425405, Dhule, Maharashtra, India.

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President Message

I am happy to see that the, R.C. Patel Institute of Pharmaceutical Education and Research, Shirpur is organizing one-day national conference " **Trends in Chromatography and Spectroscopic Techniques (TCST)** on **6th Oct. 2012**. Our institutes are regularly organizing such types of conferences, workshops and seminars for the development of profession.

The topic chosen for the conference is very relevant as far the current development in pharmaceutical field is concerned.

I hope this deliberation will witness participation of many researchers across the country.

I am happy to seeing that the organizing committee is compiling selected abstracts in the electronic form (CD) which will be released during the conference.

I wish for the success of the conference and also wonderful stay at Shirpur**.**

Regards,

Amrish R. Patel

President, S.E.S.

IJPRR Oct 2012;1(6):1-45 ISSN: 2278-6074

Chairman Message

I am happy to know that R. C. Patel Institute of Pharmaceutical Education and Research, Shirpur is organizing one day national conference on "Trends in Chromatography and Spectroscopic Techniques" (TCST) on 6th Oct. 2012.

In the 21st century, the pharmaceutical field is undergoing many metamorphic changes; therefore, people working in these areas needs sound theoretical and practical knowledge. In this fast world, it could be possible only by attending these kinds of conferences/ seminars / workshops.

I am confident that TCST would work on both fronts i.e. providing theoretical as well as practical exposure to its participant.

I assure you for the best kind of infrastructural as well as educational facilities for this conference.

I know that the organizing committee is taking all efforts to make this conference successful.

I wish all the best to the participants and happy to seeing them in Shirpur during conference.

Regards

R. C. Bhandari

Chairman S.E.S.

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Director Message

It gives me immense pleasure to learn that, **Department of Pharmaceutical Chemistry, R.C. Patel Institute of Pharmaceutical Education and Research**, Shirpur is organizing one-day national conference "**Trends in Chromatography and Spectroscopic Techniques (TCST)** on **6th Oct. 2012**.

The theme of the conference is really pertinent with the current scenario in the Analytical field.

I am closely observing the development of the institute and their proactive participation in organizing many scientific events and contributing in the field of pharmacy.

I wish that this conference will see participation of enthusiastic researchers from across the country.

Local organizing committee is compiling souvenir of abstracts in the form of soft copy which will be available to its member during conference.

I wish grand success to the conference and looking forward to seeing you in Shirpur.

Dr. K. B. Patil
Director S.E.S.
Former Vice-Chancellor NMU, Jalgaon

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Principal Message

It is a matter great pride for us that our institute is organizing one-day '**National conference "Trends in Chromatography and Spectroscopic Techniques (TCST)"** on 6th Oct. 2012. I extend my warm welcome and good wishes to the entire participants who have contributed to make this event interactive and memorable one.

I personally feel that such type of events must be organized regularly to strengthen the professional interactions between the researchers and Industry world. I am happy to mention over here that for **TCST-2012**, we got huge response from professionals for registrations and submission of abstracts.

In this conference we have tried our best to accommodate various topics such as key note address, plenary sessions, poster presentations and also demonstrations of instruments. I feel these all the events will be of great importance for all the participants.

I extend my thanks to all the resource persons who are delivering talks during the conference. Thanks are due to our sponsorers "Toshvin Analytical Mumbai, Spincho Biotech Mumbai, Anchrom Ltd. Mumbai, International Journal of Pharma Research and Review and Journal of Pharmaceutical Research and Clinical Practice for sponsoring the event.

As the soft copy of the abstracts will be prepared which will be released during inaugural session of the conference- this comprehensive data will prove to be a great source of scientific information to the participants.

I hope for grand success of the conference and wish happy and comfortable stay at Shirpur.

Dr. S. J. Surana

Principal

RCPIPER, Shirpur

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Convener Message

It gives me immense pleasure to inform you that **Department of Pharmaceutical Chemistry, R.C. Patel Institute of Pharmaceutical Education and Research, Shirpur** is organizing **one-day national conference** on ***Trends in Chromatography and Spectroscopic Techniques*** on **6th Oct. 2012**. The objectives of the conference are to provide platform to scientists, researchers to have intense interactions on the topics of current development in chromatographic and spectroscopic techniques. We have received magnanimous response from the researchers in this field across the country.

During the conference local organizing committee can assure you scientific sessions such as key note address, plenary lectures on various useful topics, poster presentations and demonstration of instruments to all the participants. Also, the selected scientific abstracts have been compiled in the form of electronic format **(CD)** which will be released during the inaugural session of the conference.

On the behalf of local organizing committee I welcome you to this conference and hope for magnificent stay at Shirpur.

We look forward to your participation in all the events of the conference to make it meaningful and memorable.

Dr. Atul A. Shirkhedkar

Convener TCST

Scientific Committee Message

Dear Friends,

We are pleased to note that the National Conference on Trends in Chromatography and Spectroscopic Techniques is being organized on October, 06, 2012 at Shirpur, by SES's R.C. Patel Institute of Pharmaceutical Education & Research. Some leading researchers from institutes and industries from India will participate in this event to provide input on different aspects of chromatography and spectroscopic techniques. We hope it will provide an excellent stage for all the researchers/ faculty members/ students to interact and discuss various breakthroughs, bottlenecks and recent developments in the area of analytical chemistry.

The first step in product characterization is to establish the precise chemical identity of the product. It is important to determine whether the material is a compound, i.e. a single chemical entity, a mixture of closely related compounds, mixture of isomers, or merely a loose molecular complex of readily dissociable components. Modern spectroscopic techniques, such as ^{1}H and ^{13}C NMR and infrared spectroscopy are sensitive tools for such purposes. Furthermore, powerful separation techniques, particularly chromatography in all its many forms, provide sensitive methods for purification, qualitative & quantitative determinations. These analytical techniques are consistently upgraded & require attention.

We hope the plenary & poster session of conference will provide a platform for exchanging the ideas, information and sharing of views. This will also help in academic exchange and future collaboration.

Regards

Dr. Saurabh C. Khadse

Mr. Kapil M. Agrawal

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Local Organizing Committee

Finance
Dr. Atul A. Shirkhedkar
Mr. V. K. Redasani

Registration
Mr. R. R. Patil
Mr. V.G. Ugale

Scientific
Dr. S. C. Khadse
Mr. K. M. Agrawal

Hospitality
Dr. P.S. Jain
Mr. N.G. Haswani
Md. Mujeeb G. Khan

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Dr. (Mrs.) P.V. Joshi
Mr. P. P. Dahivelkar
Mr. A .S. Patil
Ms. M. L. Jadhav
Ms. Y. B. Wani

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Mr. S. B. Ganorkar
Mr. D. M. Dhumal
Mr. A. S. Patil
Mr. P. J. Chaudhari
Mr. B. J. Mali

Transportation
Mr. V. K. Redasani
Mr. S. B. Ganorkar
Mr. D. M. Dhumal

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CONFERENCE SCHEDULE

Programme	Time
Registration	08:00 AM – 09:00 AM
Inauguration	09:00 AM – 10:00 AM
Plenary Lecture-I Dr. Kombu Rajan (LC-MS tech)	10:00 AM – 11:00 AM
Plenary Lecture-II Mr. R. Girijan (GC)	11:00 AM – 12:00 PM
Plenary Lecture-III Mr. Hande (HPTLC)	12:00 PM – 01:00 PM
Plenary Lecture-IV Mr. Amit Joshi (Spectroscopy)	01:00 PM – 02:00 PM
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*Following papers (abstracts) were presented as a full article during the conference as a part of poster competition.

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AS-09	Durgashankar Patidar	Charak Institute of Pharmacy, Mandleshwar (M.P.) 451221	Synthesis, characterization and evaluation of anti-tubercular activity of novel acetylated nicotinic acid analogues
AS-10	S. S. Patole	Department of Zoology, V. V. M's S. G. Patil Arts, Science and Commerce College, Sakri Dist-Dhule (M.S.) Sakri-424 304	Phytochemical studies and antimicrobial screening of Some indigenous plants
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		Dhule (M.S.) 425405	
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AS-19	Priti Patel, Arvind Dabhade, Ulhas Patil*	Department of Microbiology, R. C. Patel Arts, Commerce and Science College, Shirpur (Dist. Dhule) 425405, India	Rapid detection of plant protease inhibitors having antibacterial potential
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AS-01

Modern Pharmaceutical Validation

Md. Rageeb Md. Usman*, Patil Balasaheb R, Sonwane Ganesh T, Md. Abullais Md. Usman

Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda, Maharashtra, India

Abstract

The aim of article outlines the general principles and approaches that are appropriate elements of process validation for the manufacture of human and animal drug and biological products, including active pharmaceutical ingredients (APIs or drug substances), collectively referred to in this article as drugs or products. This article incorporates principles and approaches that all manufacturers can use to validate manufacturing processes and cleaning processes. This article aligns process validation activities with a product lifecycle concept and encourages the use of modern pharmaceutical development concepts, quality risk management, and quality systems at all stages of the manufacturing process lifecycle.

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AS-02

Isolation of Phytoconstituents and Evaluation of Anti-inflammatory Activity of the Leaves of *Abelmoschus manihot*

D. S. Girase, P. S. Jain*, A. A. Todarwal, S. B. Bari, S. J. Surana.

R. C. Patel Institute of Pharmaceutical Education and Research, Shirpur, Dist: Dhule (M.S.) India 425 405

Abstract

The present study was carried out to isolate the phytoconstituents and evaluate the anti-inflammatory activity of the petroleum ether and methanol extract of *Abelmoschus manihot* (Malvaceae) *leaves* using paw edema model. The air-dried, powdered laeves (1 Kg) were extracted over Soxhlet with petroleum ether and methanol. Two steryl alcohol, named 1-dodecanol (**1**) and 1-tridecanol (**2**) from petroleum ether exctract, together with a known acid ester, 1-tridecanoic acid methyl ester (**3**) from methanol extract, were isolated from *Abelmoschus manihot*. Their structures were elucidated by spectroscopic methods. The crude dried petroleum ether (10 g) and methanol (25 g)

extracts was prepared at the doses of 100, 200 and 400 mg/kg, and evaluated for anti-inflammatory using the carrageenan and histamine-induced paw edema test. The results obtained indicate that the extracts possessed significant ($p<0.01$) anti-inflammatory activity, which was found to be dose-dependent. This study showed that the petroleum ether and methanol extracts of *Abelmoschus manihot* woody stems possess potential pharmacological active constituents responsible for inhibition of the inflammation effect.

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AS-03

Detection of organic moieties in dye industry waste water: A detective and mechanistic approach

G.H. Sonawane*, A. D. Mudawadkar , V. S. Shrivastava

Department of Chemistry, Kisan Arts, Commerce and Science College, Parola, Dist. Jalgaon (M.S.) 425111, India

Abstract

An attempt has been made to study the organic-metallic interactions in dye industry waste. The waste-water and soil samples were collected from GIDC, Surat (Gujarat). The industrial waste samples were extracted by CH_2Cl_2 and analyzed for FTIR, and GC-MS for detection and identification of organic compounds. ICP–AES technique was used for detection of metals. Several organic compounds have been found which includes phenol, benzonitrile and nitrobenzene etc. The concentration of trace metals like As, Hg and Mn in water samples and Cd, As, Hg and Mn in soil samples was less than detection limit. The identified organic compounds and hazardous metals affect adversely the ground water and soil quality of the area. The presence of organic compounds in ground water ultimately affects the human health.

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AS-04

Some Novel Antimicrobial Compounds of 2-(4-thiazolyl)-*1H*-benzimidazoles

Nilesh S. Pawar*and Pramod N. Patil

Synthetic Research Laboratory, Department of Chemistry, Pratap College, Amalner, Dist.–Jalgaon 425 401 [M.S.]

Abstract

Various *N*-alkyl and *N*-acyl derivatives of 2-(4-thiazolyl)-1*H*-benzimidazole, an anthelmintic and systemic fungicide, were synthesized by polymer-supported reactions and screened for their antifungal and antibacterial potency. From the obtained antimicrobial data, we are extending these compounds to make their metal complexes and also to establish structure-activity relationships.

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AS-05

Synthesis and Antimicrobial Activity of Some New Schiff Bases of Phenothiazine Derivatives

Vivek Gupta* and D. S. Bele

Department of Pharmaceutical Chemistry**,** Charak Institute of Pharmacy, Mandleshwar, Dist. Khargone M.P.

Abstract

The Phenothiazine derivatives have unique place in chemistry as they carrying biodynamic properties such as antibacterial, antitubercular, antipsychotic, antihistaminic, antiparkinsonism and fungicidal. Phenothiazine (I) was synthesized by refluxing diphenylamine with elementary sulphur in presence of iodine, which on refluxattion with 4- chloroaniline in sodamide gave 10 (4-aminophenyl) phenothiazine (II). II on reflux with various aromatic aldehyde gave Schiff bases of phenothiazine derivatives (T_{1-} T_{10}). The purity & homogeneity of all synthesized compound were routinely ascertained by Melting point, Thin layer chromatography and UV spectroscopy. All the synthesized compounds were characterized by IR, ^{1}H NMR and MS. All the compounds were subjected to antimicrobial screening by cup plate method. Antibacterial activity was tested using *Escherichia coli, Klebsiella pneumoniae*, *Staphylococcus aureus, Pseudomonas aeruginosa* and antifungal activity was screened against *Aspergillus niger* and *Candida albicans.* The activity results of all synthesized compound were compared with Chloramphenicol 10 µg / ml for antibacterial activity and Ketoconazole 10 µg / ml for antifungal activity. The compounds T_1 and T_6 exhibited better antibacterial activity, where as compound T_2 and T_4 showed good antifungal activity when compared to standard drug.

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AS-06

Stability Study of Drugs : LC-MS as Tool

H. B. Gayakwad*, D. D. Patil, S. B. Bari

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Abstract

With ever increasing regulatory and compendial stringency on the control of impurities (IMPs) and degradation products (DPs) (including genotoxic impurities) in drug substances and finished pharmaceutical formulations, a profound emphasis is being paid on their characterization and analysis at trace levels. Fortunately, there have been parallel tremendous advancements in the instrumental techniques that allow rapid characterization of IMPs and/or DPs at the prescribed levels of ~0.1%. With this, there is perceptible shift from conventional protocol of isolation and spectral analysis to on-line analysis using modern sophisticated hyphenated tools, like GC-MS, LC-MS, CE-MS, SFC-MS, LC-NMR, CE-NMR, LC-FTIR, etc. The broad coordinated implementation of common platform technologies, such as LC/MS, can be a key factor in attaining increased throughput, sensitivity and data quality for pharmaceutical discovery. The determination was done for an active pharmaceutical ingredient, its pharmaceutical dosage form in the presence of degradation products, and its process-related impurities. The drug was subjected to stress conditions of hydrolysis (acid and base), oxidation, photolysis and thermal degradation as per ICH guideline Q1A(R2) prescribed stress conditions to show the stability-indicating power of the method. Significant degradation was observed during hydrolysis, and the major degradant was identified by LC–MS.

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AS-07

Synthesis and Spectral study of four and five co-ordinate copper (II) complexes derived from 5-chloro-2-hydroxy acetophenone thiosemicarbazone

J. R. Gujarathi, R. S. Bendre*, S. S. Patil, S. V. Patil

School of Chemical Sciences, NMU, Jalgaon (M.S.) 4254001

Abstract

5-chloro-2-hydroxy acetophenone thiosemicarbazone was synthesized by refluxing hot ethonolic solution of 5-chloro-2-hydroxy-acetophenone and thiosemicarbazide in the mole ratio 1:1 on hot plate at 90 ^{0}C for 3-4 hours. It's complex with Cu (II) and adducts using nitrogen bases (Pyridine, bipyridine, 1, 10 phenanthroline, α-picoline, β-picoline) were synthesized. The ligand, complex and adducts were studied by NMR, IR, UV Visible, Elemental analysis, ESI-MS, Reflectance spectra, magnetic susceptibility, TGA, Molar conductivity and biological activity (antifungal,antibacterial,antioxidant).. The free ligand and its metal complexes were tested for their *in vitro* antimicrobial properties against bacteria E.Coli, Pseudomonus and fungi Aspergillus, Candida Albilculce in order to assess their antimicrobial potential. The [Cu(HAT)(Phen)]chelate exhibited high activity against all the bacteria and fungi.TGA analysis was carried out in NCL,Pune.The TGA analysis showed that the complexes prepared with Cu were stable up to 115-200^{0}C.The first step of decomposition was completed at about 200^{0}C.The second step of decomposition was completed at 300-400^{0}C.The stable oxide CuO was formed after 775^{0}C.Thus it is evaluated that the coordination of metal ion to ligand is responsible for thermal stabilities of the metal complexes..Elemantal analysis data are consistent with 1:1 ratio of metal ion, thiosemicarbazone for complex and 1:1:1 ratio for metal thiosemicarbazone and heterocyclic base for all adducts. The complex and all adducts are insoluble in most of the common polar and non polar solvents. They are soluble in DMF in which conductivity measurements were made, showing all complexes to be non electrolyte.

Email:

AS-08

Development and Validation of Stability-Indicating RP-HPLC Method for Venlafaxine HCl

Gadge Kiran*, Tejaswini Mahajan, Pallavi Bhadan, Sandeep Sonawane, Dinesh Rishipathak

Department of Pharmaceutical Analysis, MET's Institute of Pharmacy, MET League of Colleges, Bhujbal Knowledge City, Adgaon, Nashik 422 003

Abstract

Stability indicating methods are quantitative test methods that can detect changes with time of drug substances and drug products. Information of type and amount of degradation products over time is important for safety of drugs. With the advent of International Conference on Harmonisation (ICH) guidelines, the requirement of establishment of stability-indicating assay method (SIAM) has become more clearly mandated. The guidelines explicitly requires the conduct of forced degradation studies under the variety of conditions, like extreme of pH, light, oxidation ,dry heat, acidic, basic, hydrolytic, photolytic and oxidative conditions. etc. along with the separation of drug from the degradation products. In present work a simple and specific stability-indicating method for Venlafaxine HCl was developed and validated as per the ICH guidelines. Venlafaxine HCl was subjected to forced degradation under acidic, basic, hydrolytic, photolytic and oxidative conditions. Successful separation of the drug from degradation products formed under forced degradation conditions was achieved on a HiQSiL C18 column (250mm x 4.6mm, 5mcm) using methanol: phosphate buffer (pH 3) (60: 40 v/v) as mobile phase in isocratic mode with flow rate of 1 ml/min. The detection was carried out at 230nm. The method was validated for linearity, range, accuracy, precision, and selectivity. The developed method found to be simple, less time consuming and suitable for routine quantitative estimation of Venlafaxine HCl in capsule formulation.

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AS-09

Synthesis, Characterization and Evaluation of anti-tubercular activity of Novel Acetylated Nicotinic acid analogues

Durgashankar patidar*

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Abstract

Sixteen nicotinic acid derivatives, containing nitro, methoxy, hydroxyl, chloro, amino groups were Synthesized, Characterized by IR, ^{1}HNMR, MASS Spectroscopy and Elemental analysis and evaluated for their *in vitro* antibacterial activity against *Mycobacterium tuberculosis* H37Rv using the Alamar Blue susceptibility test and the activity expressed as the minimum inhibitory concentration (MIC) in µg/mL. The

compound 2B exhibited the best result (1.2 µg/mL) when compared with first line drugs such as isoniazid (INH) and rifampicin (RIP). Therefore this class of compounds could be a good starting point to develop new lead compounds in the treatment of multi-drug resistant tuberculosis.

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AS-10

Phytochemical Studies and Antimicrobial screening of Some Indigenous Plants

S. S. Patole*
Department of Zoology, V. V. M's S. G. Patil Arts, Science and Commerce College, Sakri Dist Dhule (M.S.) Sakri- 424 304.

Abstract

Aqueous extract of 60 indigenous plant species were subjected for phytochemical studies. Amongst, 24, 17 and 15 plants showed positive test for alkaloid (Dragendorff's and Mayer's test), cardiac glycosides (Molisch's and Keller-killiani test) and saponin (foam and haemolytic test) respectively. Plant extract were screened for their *in vitro* antimicrobial activity against microbes like *Bacillus substilis, Escherichia coli* and *Aspergillus niger*. The results from disc diffusion method revealed that of the 60 plants, 27, 14 and 19 plant extracts inhibited growth of *B. substilis, E. coli* and *A. niger* respectively. Higher zone of inhibition were reported in 11 plants, whereas 32 plants exhibited negligible potential. Among the plants evaluated, *Allium sativum* Linn, *Azadirachta indica* A. Juss, *Curcuma longa* Linn, *Sphaeranthus indicus* Linn and *Tridex procumbens* Linn showed potential broad spectrum antimicrobial activity.

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AS-11

Two Simple HPTLC methods for quantification of Naratriptan hydrochloride in bulk and pharmaceutical formulation

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Abstract

Two simple, precise, normal phase (Method A) and reversed-phase (Method B) HPTLC/Densitometry method have been developed for determination of Naratriptan Hydrochloridein bulk and in tablet formulation. 'Method A' was developed with aluminium plates precoated with silica gel $60F_{254}$ S and RP-18 F_{254} as the stationary phase. The solvent system consisted of chloroform:2-propranol:triethylamine (8:2:0.3v/v)was used as mobile phase. 'Method B'was carried out using aluminium coated with RP-18 silica gel 60 F_{254}S HPTLC plates using methanol: water:triethylamine (9:1:0.4*v/v*)as mobile phase. Densitometric scanning was performed at 223nm in both the methods. In Method A and Method B, good separation and resolution of drug was obtained with R_f values 0.55 ± 0.02. These methods can be used in routine pharmaceutical analysis.

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AS-12

Synthesis of Novel Quinazoline Analogs as Potential Anticancer Agents

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Abstract

Protein tyrosine kinases are enzymes involved in many cellular processes such as cell proliferation, metabolism, survival, and apoptosis. Several protein tyrosine kinases are known to be activated in cancer cells and to drive tumor growth and progression. Blocking tyrosine kinase activity therefore represents a rational approach to cancer therapy. Quinazolines are of considerable interest because of the diverse range of their biological properties. In order to produce potential new antitumor drugs, a novel series of 3-(substituted)-2-methylquinazolin-4(3H)-one & 3-(substituted)-2-phenylquinazolin-4(3H)-one derivatives has been synthesized by conventional method. Synthesized derivatives were characterized and identified by ^{1}H-NMR, ^{13}C- NMR, FT-IR and Mass Spectroscopy. Biological evaluation as anticancer agents was carried out by using National Cancer Institute (NCI). Among the synthesized thirty compounds, fifteen compounds were granted NSC code and screened at National Cancer Institute (NCI), USA for anticancer. Disease oriented anticancer screen protocol were investigated. Synthesized derivatives showed remarkable anticancer activity. Rational

approach enabled the understanding of pharmacophoric requirements for inhibition of EGFR-*tyrosin kinase*, that may lead to discovery of potent anti cancer agents.

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AS-13

Analytical Method Validation as Per ICH Guidelines

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Abstract

Validation of an analytical procedure is the process by which it is established, by laboratory studies, that the performance characteristics of the procedure meet requirements for its intended use. All analytical methods that are intended to be used for analyzing any samples will need to be validated. The objective of validation of an analytical procedure is to demonstrate that it is suitable for its intended purpose. There are many reasons for the need to validate analytical procedures. Among them are regulatory requirements, good science, and quality control requirements. Scientists would want to apply good science to demonstrate that the analytical method used had demonstrated accuracy, sensitivity, specificity, and reproducibility. Finally management of the quality control unit would definitely want to ensure that the analytical methods that the department uses to release its products are properly validated for its intended use so the product will be safe for human use. Methods need to be validated or revalidated before their introduction into routine use. International Conference on Harmonization (ICH) of Technical Requirements for the Registration of Pharmaceuticals for Human Use has developed a text on the validation of analytical procedures. This document presents a discussion of the characteristics for consideration during the validation of the analytical procedures included as part of registration applications submitted within the EC, Japan and USA. This document does not necessarily seek to cover the testing that may be required for registration in, or export to, other areas of the world. The document includes definitions for validation characteristics as accuracy, precision (repeatability, intermediate precision), specificity, detection limit, quantitation limit, linearity, range.

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AS-14

Stability indicating method for simultaneous estimation of pioglitazone and glimepiride by HPLC in tablet dosage form

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Abstract

The aim of this study was to develop stability indicating assay method for simultaneous estimation of pioglitazone and glimepiride by HPLC in tablet dosage form under a variety of ICH recommended test conditions. A stability indicating HPLC assay method was developed and validated for pioglitazone and glimepiride in tablet dosage form using low pressure gradient RP-HPLC method which employed Waters symmetry C18 column(150mm into 4.6mm I d.,5um)with a mobile phase consisting of sodium dihydrogen phosphate dihydrate buffer (pH 5.5) and acetonitrile (6.4 v/v) & UV detection at 228 nm at a flow rate of 1.5ml/min. The stress testing of pioglitazone API, glimepiride API & its tablet was carried out under acidic, alkaline, oxidation and thermal conditions. The pioglitazone and glimepiride peaks were well resolved from the peaks of there degradation products. The proposed method was validated for sensitivity, linearity, accuracy, specificity, precision, robustness and solution stability. From the degradation studies it was found that pioglitazone drug was stable in thermal and acidic but unstable in alkaline and oxidative condition. The response of both the drugs was found to be unstable in all four stress conditions. The response of both the drugs was linear over the range 50-150% of the test concentration. The accuracy & precision of the system were found to be within the limits of acceptance criteria. This study presents a simple and validated stability-indicating HPLC method for simultaneous estimation of both drugs in the presence of degradation products. The developed method is specific,accurate,precise & robust. All the degradation products formed during forced degradation studies were well separated from the analyte peak.

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AS-15

Synthesis and Biological Activity of Oxygen Containing Heterocyclic Compounds

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Abstract

Among the flavonoids and isoflavonoids found in plants with potential beneficial effects to human health, genistein, a major metabolite of soya, is found to be one of the most potent anticancer agent and was found to inhibit the growth of various cancer cell lines both in-vitro and in-vivo. 4H-chromen-4-one serves as important pharmacophore for such activities. We thought to synthesize compounds having chromenone (benzopyran-4-ones) pharmacophore. The schiff's bases and chalcones of 4H-chromen-4-one pharmacophore are not still been reported and evaluated for biological activity. In present work 4H-chromen-4-one analogue have been synthesized and characterized spectroscopically and evaluated for its antimicrobial activity against S.aureus, E.coli, P.aruginosa and K.pneumoni by agar cup plate method. In the present work 3-formyl-4H-chromen-4-one having 7-hydroxyl group was synthesized by Vilsmeir hack reaction with the starting materials 2, 4 dihydroxy acetophenone and phosporyl oxychloride. The resulting formyl chromen-4-one was treated with available amino compound or ketone to afford schiff's bases or chalcones. The target compounds were characterized by IR. The resulting compounds gave promising antimicrobial activity.

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AS-16

Bio Analytical Method Development

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Abstract

Analytical method used for characterization, release and stability testing of biotechnological/biological products are often automatically referred to as "Bio analytical method". Analytical method employed for the quantitative determination of

drugs and their metabolites in biological samples are key determinants in generating reproducible and reliable data which in turn are used in evaluation and interpretation of bioavalability, bio equivalence and pharmacokinetics findings. Any bioanalytical method involves several steps. The first step is taking aliquots of sample for the analysis followed by extraction procedure and sample clean up, spectroscopy/chromatography analysis, detection and quantification, mainly by liquid chromatography. Full validation of new bioanalytical method in particular laboratory for the first time should be performed to support pharmacokinetic, bioavailability, bioequivalence and drug interaction studies in new drug application (NDA) or an abbreviated new drug application (ANDA) All these parameters are need to be defined during full validation of bioanalytical method such as lower limit of quantitation LLOQ) , limit of detection(LOD) accuracy, precision selectivity, sensitivity, reproducibility and stability.

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AS-17

Phytochemical Study of Leaves of *C. fascicularis* Lam.

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Abstract

The present study aimed to identify and characterize the active principles from the leaves of *C. fascicularis* Lam. For isolation of compounds, the dried leaves powder of *C. fascicularis* Lam. was subjected to cold maceration with chloroform as solvent and subjected to chromatography. Two compounds were isolated and purified by chloroform. Mass spectrum of CEC-1 and CEC-2 showed a parent molecular ion peak at m/z 412 which correspond to molecular formula $C_{29}H_{48}O$ and 414 corresponds to $C_{29}H_{50}O$. From physical, chemical and spectral characteristics CEC-1and CEC-2 were concluded as Stigmasterol and β- Sitosterol.

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AS-18

Development and Validation of Stability-Indicating RP-HPLC Method for Secnidazole

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Abstract

Stability is defined as the capacity of a drug substance or a drug product to remain within specifications established to ensure its identity, strength, quality, and purity throughout the retest period or expiration dating period, as appropriate (ICH Q1A, 2003, Q1C, 1996). For the development of a sound scientific protocol for the stability studies, an understanding of the conditions under which a drug degrades as well as the mechanism of the breakdown is needed. This is established through a series of stress studies designed to elucidate the intrinsic stability of the new molecule by establishing its degradation pathway. A stress stability study is often referred to as a 'preformulation study' or 'characterization study'. Instability of a drug product can lead to a decrease in its bioavailability, rather than to loss of drug or the formation of toxic degradation products. This reduction in bioavailability can result in a substantial lowering in the therapeutic efficacy of the dosage form. The aims of the present study is thus to establish the inherent stability of Secnidazole, through stress studies under a variety of ICH recommended test conditions and develop validated stability indicating assay method. To develop optimized and valid stability-indicating HPLC-based method for the assay of secnidazole The Mobile phase of Methanol: Water (60:40, v/v) gave adequate retention time with good peak shape. The chromatographic conditions which gave well peak of Secnidazole (i.e., Theoretical plates > 2000, asymmetry < 2) and its degradation product with reasonable retention time using the same mobile phase were selected. To check stability of Secnidazole different parameter is studied like Acid degradation Alkali degradation Wet heat degradation Oxidative degradation Photolytic degradation Dry heat condition.

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AS-19

Rapid Detection of Plant Protease Inhibitors having Antibacterial Potential

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Abstract

Microbial proteases are involved in virulence processes like colonization and evasion of host immune defences, acquisition of nutrients for growth and proliferation, facilitation of dissemination, or tissue damage during infection. The understanding that proteases are important in pathogenic microbes; these are suitable targets for the drug design. One of the mechanisms to target the proteases is application of protease inhibitors. Protease inhibitors (PIs) are molecules that inhibit the function of proteases and play essential roles in biological systems by regulating proteolytic processes. To combat natural infections by several bacteria and fungi, plants produce compounds that act as natural defences against pathogens. Plants synthesize inhibitory polypeptides that can suppress the enzyme activities in response to attack by proteinases produced by phytopathogenic microorganisms. Protease inhibitors are small proteins that have mainly occurring in storage tissues, such as tubers and seeds. They have also been found in the aerial parts of plants. In present investigation an efficient method by employing X-ray film is discussed to detect the protease inhibitor in plant parts. Total 22 plants from north Maharashtra region were tested for presence of protease inhibitor and seven plants confirmed for protease inhibitor having antibacterial potential.

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AS-20

Physical and Chemical Stability of Drug Nanoparticles

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Abstract

As nano-sizing is becoming a more common approach for pharmaceutical product development, researchers are taking advantage of the unique inherent properties of

nanoparticles for a wide variety of applications. This article reviews the physical and chemical stability of drug nanoparticles, including their mechanisms and corresponding characterization techniques. A few common strategies to overcome stability issues are also discussed.

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AS-21

Determination of β-hydroxy acid form of Lovastatin in a Fermentation Broth of *A. terreus*

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Abstract

The lovastatin is synthesized in its β-hydroxyacid form in fermentation broth and was measured by high performance liquid chromatography (HPLC). A rapid and simple HPLC method for the determination of Lovastatin (mevinolin) and mevinolinic acid in fermentation broth of *Aspergillus terreu.* The β- hydroxy form of the lovastatin elutes earlier than its lactone form. The purified fermented broth is diluted five times with acetonitrile and water (1:1). The HPLC profile of the fermentation broth of *Aspergillus terreus* PM3 showed a single, sharp and symmetrical peak at a retention time of 6.8 min. (open hydroxyacid form) which is comparable to standard lovastatin with respect to both retention time and absorption at 238 nm

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AS-22

Computer Software Validation in Pharmaceuticals

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Abstract

It is the process by which all aspects of a process (including computer systems) are shown to meet all quality requirements, and comply with applicable rules and regulations regarding product quality, safety and traceability. The scope of this guidance

is somewhat broader than the scope of validation in the strictest definition of that term. This guidance describes how certain provisions of the medical device Quality System regulation apply to software and the agency's current approach to evaluating a software validation system. The objective of these activities is to document evidence that each computer system will fulfill its intended purpose in a production, laboratory, or research operation. The intention is to avoid software problems that could have serious impact. Good computer system validation have many advantages like improve quality assurance, reduce other validation cost and time, improve the computer system and computer assists software in pharmaceutical field is been need to validate.GMP compliance and 21 CFR part 11 regulation which impact on product quality, safety, identity or efficacy that subject. It is likely that the future will see manner of computer system validation terminology and techniques as a common technical discipline across other industry sectors as well. It is the technical discipline that pharmaceutical and life science companies use to ensure that each information technology application fulfills its intended purpose. Electronic Records guidance from FDA; however it has always been an expectation of the MHRA / EU that electronic records, including raw data must have the same integrity records.

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AS-23

Formulation and Evaluation of *In situ* gelling system for Intranasal Administration of Salbutamol Sulphate

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Abstract

The main aim of present study was to develop a novel *in situ* mucoadhesive gel of salbutamol sulphate using gellan gum and hydroxylpropyl methyl cellulose (HPMC) for intranasal administration. Salbutamol sulphate, β_2 agonist is a powerful antiasthamatic drug belongs to BCS Class III which has oral bioavailability of 50% due to hepatic first pass metabolism. *In situ* gel offers advantages like ease of preparation and administration, accuracy of dosing, improve bioavailability, decrease nasal mucociliary clearance, avoid first pass metabolism and improve patient compliance. Formulations

were modulated so as to have gelation at physiological ion content after intranasal administration. Tween 80 (1 % w/v) was used as penetration enhancer. Developed formulations were evaluated for *in vitro* gelation, viscosity, gel strength, pH, drug content uniformity, *in vitro* mucoadhesion, *in vitro* diffusion study, *ex vivo* permeation, histopathology. Formulations showed pH in the range of nasal cavity and optimum viscosity for nasal administration. The mucoadhesive force in terms of detachment stress depends upon concentration of HPMC (0.2 %w/v) and drug release was found to be 97.34 % in 11 h. Finally, histopathological examination did not detect any damage during *in vitro* permeation studies. Optimized formulation was stable at accelerated condition for period 3 months. Hence, *in situ* gel system may be a promising approach for intranasal delivery of salbutamol sulphate for therapeutic improvement.

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AS-24

Formulation, Development and Chromatographic Estimation of Nanoemulsion of *Glycerrhiza glabra* extract

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Abstract

The purpose of this study was to enhance the bioavailability of *Glycerrhiza glabra* extract by formulation of nanoemulsion for transdermal application. Nanoemulsion system with Tween 80 as surfactants and IPA as cosolvent and iso propyl myristate as oil was developed for trandermal delivery of Glycerrhiza glabra extract. Region of nanoemulsion was found in the pseudo-ternary phase diagrams developed at different tween 80, IPA ratios. The optimal nanoemulsion formulation consisted of water(14.28%), tween 80 (38.10%), IPA (19.04%) IPM (28.57%) from the chromatographic estimation. It was found that 61.26% of MAG present in nanoemulsion. *In vitro* and *Ex vivo* diffusion study shows that absorption of *Glycerrhiza glabra* extract (MAG) was found to be fairly rapid, as compare to aqueous solution of extract; also improve bioavailability of the drug.

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AS-25

Analysis of Solid State Degradation Behaviour of Meropenem by HPLC

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Abstract

A (RP-HPLC) was developed and used to study the solid state degradation behavior of Meropenem. The RP-HPLC method was developed by analyzing various stress degradation products and hence, forced degradation of Meropenem was carried out in different conditions like acid and alkali hydrolysis, peroxide oxidation, thermal and photolytic conditions. For solid state degradation studies various acidic and basic solid stressors were used. Meropenem was found to be unstable in acidic stressors in comparison to the basic stressors. Meropenem was found to be more stable with sodium carbonate and sodium bicarbonate, which were used as a stressor. The separation was carried on a Kromasil C18 (100 × 4.6 mm, 5µ) column with mobile phase consisting methanol and phosphate buffer (pH 3.0, 10 mM) on a gradient method with the UV detection wavelength of 302 nm. Stress studies revealed that Meropenem was found to be labile to acid, alkali, oxidative, and neutral conditions, while, it was stable to thermal and photolytic conditions. Also, results obtained from the analysis of stress samples indicated that the method and selected chromatographic conditions were satisfactory. The method was able to separate all the degradation products as well as drug. The same developed method was used to study the solid state behavior of the meropenem. For this, Meropenem along with different acidic and basic excipients was placed in stability chamber (at 40°C/75% RH) for one month and two months duration. The solid state degradation study the drug was found to be highly labile to acidic stressor, while it was stable to basic excipients especially with sodium carbonate and sodium bicarbonate. Hence, it can be stated with certainty, that the developed method can be used for the routine analysis of Meropenem stability samples.

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AS-26

RP-HPLC Analysis of Entacapone to Determine its Degradation Behavior under Stress Conditions as well as in Microenvironment Induced pH Conditions

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Abstract

Entacapone is a selective, reversible catechol-O-methyl transferase (COMT) inhibitor for the treatment of Parkinson's disease which is not yet official in any pharmacopoeia. Hence, the objective of the present study was to develop an analytical procedure for entacapone drug substance which should possess potential to separate all its degradation products formed during the process. International Conference on Harmonization (ICH) defined stress conditions as well as in microenvironment induced pH conditions. We, herein, report a new, simple, specific, accurate, cost effective and reproducible high-performance liquid chromatographic (HPLC) method for the determination of entacapone. The separation was carried out on Kromasil C-18 (100 x 4.6mm, 5 µm) column using UV detector in a gradient mode and the mobile phase constituted of methanol and phosphate buffer (pH 3.0) at a flow rate of 1 mL min^{-1}. The method was validated with respect to linearity, precision (inter-day & intra-day), accuracy and repeatability. Force Degradation study was performed by exposing bulk drug (entacapone) to different acidic, basic, thermal, photolytic and oxidative conditions. In solid state degradation study the drug was combined with alkaline and acidic solid stressor and these samples were then subjected to accelerated stability condition 40°C/75% RH for 2 months. From the result of force degradation study and solid state degradation study it was observed that the one of the resolved degradation product was common in both the study. (RT = 7.92 to 7.98)

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AS-27

The development of planar chromatography (scientoimetric study)

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Abstract

The important meaning of planar chromatography in modern analytical chemistry and main directions of its development were the basis to carry out the scientometric investigation. The main purpose of the given work was to estimate of the basic tendencies of development of planar chromatography from beginning to recent scenario based on the articles published in the following journals: Journal of Planar Chromatography – Modern TLC, Chromatographia, Analytical Chemistry, Journal of Chromatography A, Journal of Analytical Chemistry, Russian Journal of Physical Chemistry A, Sorption and chromatographic processes (Russia), as well as the abstracts of the articles published in Camag Bibliography service. When conducting the given research, the methods and approaches described earlier were used.

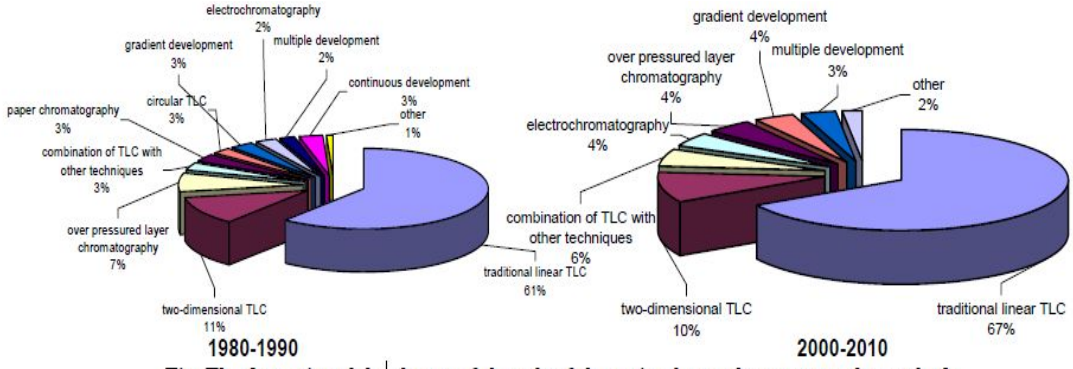

Fig. The dynamics of the change of the role of the main planar chromatography methods

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AS-28

Bioanalytical Method Validation: An Essential Element in Pharmaceutical Research

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Abstract

Quantitative assessment of drugs and their metabolites in biological liquid is essential during drug discovery and development. High-quality science requires well-documented, well-operated and well-designed experiments followed by a significant interpretation of data. Bioanalysis and the production of toxicokinetic, pharmacokinetic, and metabolic data play a fundamental role in pharmaceutical research and development. Experimentation should be based on accepted scientific ideology, and appropriate controls should be included to show that the experimental setup is working as expected. Assay validation is the evaluation of a test method to determine its suitability for a particular use. The basic parameters for this validation include accuracy, sensitivity, selectivity, precision, reproducibility, and stability. Example of bioanlytical method includes GC, HPLC, LC-MS, LC-MS-MS, GC-MS, and GC-MS-MS. Bioanalytical method validation involve all the events that reveal that a particular method used for quantitative measurement of analytes in a given biological matrix, such as plasma, serum, blood, or urine, is reliable and reproducible for the anticipated use. In the pharmaceutical research, risks related to safety of human and animal health care products are tackled by a complete set of guidelines and regulations covering the development, production and testing of these substances, including procedures related to the use of analytical methods. Assay validation is a necessary part of the underlying quality system. The importance given to it demonstrated by the existence of several regulatory and guidance documents covering this subject that have been published by official agencies or professional bodies like the EMA, FDA, and ICH.

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AS-29

Development and validation of HPTLC method for Determination of Dapoxetine Hydrochloride in Bulk and Tablets

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Abstract

Dapoxetine Hydrochloride is a Serotonin intake inhibitor; used in treatment of premature ejaculation. A new rapid, simple, precise High Performance Thin-Layer chromatography (HPTLC) has been developed and validated for quantitative determination of Dapoxetine Hydrochloride in bulk and in Tablets. HPTLC separation was performed on aluminium plates precoated with silica gel 60 F_{-254} as the stationary phase using toulene: methanol : triethylamine (9:1:0.2 *v/v*) as mobile phase. Densitometric scanning was performed at 293 nm over the concentration range of 600-3600 ng/band. The method was found to give compact and well resolved band for Dapoxetine Hydrochloride at Retention factor (R_f) 0.48 ± 0.02. The linear regression analysis data for calibration graph showed good linear relationship with r^2= 0.998. The method was validated for precision, recovery, robustness, ruggedness and sensitivity as per International conference on Harmonization (ICH) guidelines. The proposed developed RP-HPTLC method can be applied for identification and quantitative determination of Dapoxetine Hydrochloride in bulk and in Tablets.

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AS-30

Development and Validation of RP-HPLC Method for Determination of Safinamide Mesylate in Bulk and in Tablet Dosage Form

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Abstract

A rapid, highly sensitive high performance liquid chromatographic method has been developed for the determination of Safinamide mesylate in bulk drug and in tablets. Safinamide mesylate was eluted from a NEOSPHER RP C_{18} reversed phase column with

a mobile phase consisting of methanol and water (80:20, *v/v*) at a flow rate of 1 mL/min with UV detection at 226 nm. The retention time for Safinamide mesylate was 5.2 min. The linear response (r^2 = 0.9998) was observed in the range of 5 - 30 µg/mL with limits of detection (LOD) and quantification (LOQ) being 0.27 and 0.83 µg, respectively. The method shows good recoveries and intra and inter-day relative standard deviations were less than 1.0%. Validation parameters as specificity, accuracy, ruggedness and robustness were also determined. The proposed method provides accurate and precise quality control tool for routine analysis of Safinamide mesylate in bulk and in tablet dosage form.

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AS-31

Development and Validation of UV- Spectrophotometric Methods for Estimation of Safinamide Mesylate in Bulk and Tablet dosage form

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Abstract

Three new simple, precise and economic spectrophotometric methods were developed and validated for the estimation of Safinamide in bulk and tablet dosage form. First method includes determination of Safinamide by Zero order spectroscopy at absorption maxima 226 nm (Method A), second method applied was First order derivative spectra showing minima at 235 nm with scaling factor 2 (Method B) and third method was Area under Curve for analysis of Safinamide in the wavelength range of 227.60-242.20 nm (Method C). The drug was found to obey Beer- Lambert's law in the concentration range of 4-24 µg/mL for all three methods. The correlation coefficients were found to be 0.9997, 0.9999 and 0.9997 by zero order, first order derivative and area under curve respectively. All the methods were validated with respect to accuracy, precision and ruggedness. The mean % recoveries were found satisfactory for all three methods. Thus proposed methods have been successfully applied for the estimation of Safinamide in bulk and tablet dosage form.

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AS-32

Protection-Deprotection Chemistry Approach, to Afford Chiral Aziridines

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Abstract

Present work deals with the synthesis of Aziridine ring by using protection and deprotection chemistry approach to afford stable chiral aziridines. Chiral L-Serine molecule as a starting material has a two centers viz: amino and ester terminals needs to be protected for final cyclization to yield a protected aziridine molecules. Amino terminal is protected by N–BOC, N–Trityl, N–CBZ, N–Bz, N–Ts, N–Ns. Ester terminal being protected by O–Methyl, O-tBu. While cyclization we have found that due to electron withdrawing ability of few protecting group cyclization was not possible to yield chiral aziridine. Further it has been observed that for nucleophilic ring opening reaction on aziridine, the protected aziridine doesn't give desired substitution of aromatic nucleophile, so deprotection of aziridine becomes necessary. Deprotection of all aziridine molecules was successfully done using TFA at 0^0C Temp. All Synthesized compounds were characterized by Lc-Ms and ^{1}HNMR 400 MHz in $CDCl_3$.

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AS-33

Stability-Indicating HPLC Determination of Erdosteine in Bulk Drug and Pharmaceutical Dosage Form

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Abstract

A novel stability-indicating high-performance liquid chromatographic assay method was developed and validated for quantitative determination of erdosteine in bulk drugs and in pharmaceutical dosage form in the presence of degradation products. An isocratic, reversed phase HPLC method was developed to separate the drug from the degradation products, using an Ace 5-C18 (250 × 4.6 mm, 5 µm) advance chromatography column, and 10 mmol L^{-1} acetonitrile and Phosphate Buffer (35:65 v/v) as a mobile phase. The detection was carried out at a wavelength of 232 nm. The

erdosteine was subjected to stress conditions of hydrolysis (acid, base), oxidation, photolysis and thermal degradation. Degradation was observed for erdosteine in base, in acid and in 30% H_2O_2. The drug was found to be stable in the other stress conditions attempted. The degradation products were well resolved from the main peak. The percentage recovery of erdosteine was from (99.78 – 101.25 %.) in the pharmaceutical dosage form. The developed method was validated with respect to linearity, accuracy (recovery), precision, system suitability, specificity and robustness. The forced degradation studies prove the stability indicating power of the method.

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AS-34

Spectrophotometric Estimation of Valsartan in Pharmaceutical Formulation Using Sodium Lauryl Sulphate by Micellar Solublization Phenomenon

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Abstract

A simple and sensitive UV-Spectrophotometric method has been developed for the estimation of Valsartan in bulk and in pharmaceutical formulation. This method is based on the micelle formation around the drug molecule to enhance the solubility of poorly water soluble drug, Valsartan and measurement of absorption at 245nm. The solubility of poorly water soluble drug can be achieved using organic solvents for their routine analysis in bulk and pharmaceutical industry. The use of organic solvents in the analysis has various limitations and it can be overcome by proposed method. The present method obeys Beer's law in the concentration range of 4-24µg/ml with $r^2$0.9986. The Percentage label claim estimated by this method was 100.36 and percentage recovery estimated was 106.57. The S.D. and %R.S.D were found to be 0.006344 and 2.076% respectively. Thus the proposed method is accurate and reproducible and can be applied for estimation of Valsartan in bulk and in pharmaceutical formulation.

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AS-35

Green Chemistry: Currents and Advances

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Abstract

Green chemistry consists of chemicals and chemical processes designed to reduce or eliminate negative environmental impacts. The use and production of these chemicals may involve reduced waste products, non-toxic components, and improved efficiency. Green chemistry is a highly effective approach to pollution prevention because it applies innovative scientific solutions to real-world environmental situations. Chemical products and processes should be designed to the highest level of this hierarchy and be cost-competitive in the market.

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AS-36

Analytical Method Development And Validation Protocol Fortrospium Chloride In Matrix

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Abstract

Trospium Chloride is the new upcoming molecule official in British Pharmacopoeia 2009. It is an antispasmodic, antimuscarinic agent. It is used in the treatment of overactive bladder with urge incontinence. It is also used as anticholinergic compound. A simple spectrophotometric method was developed forthe determination of Trospium Chloride in lactose matrix. Trospium Chloride was estimated at λ max- 258 nm in distilled waterand obeyed beer's law in the concentration range of 200-1000 µg/ml. The absorbances were plotted against the corresponding concentrations to obtain the calibration graph. The LOD 0.9428 and LOQ 2.8569were obtained with the correlation coefficient of0.9999. For trospium chloride, the linear equation was found to be Y=0.00089X + 0.0228. The percentage recovery was found to be 100.15%. The method

was validated according to the ICH guidelines. Specificity, linearity and range, accuracy and robustness were demonstrated and met the acceptance criteria as per the ICH guidelines. Precision was calculated as % Relative Standard Deviation (0.0498). The results demonstrated that the procedure is accurate, precise, reproducible (Relative Standard Deviation< 2%), while being simple, economic, less time consuming.

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AS-37
A QSAR Analysis of Coumarin Derivatives as TNF-α Inhibitor - A Rational Approach to Anticancer Drug Design

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Abstract

A set of one hundred twenty two coumarin derivatives with TNF- α inhibitory activity was subjected to the two dimensional quantitative structure activity relationships (2D-QSAR) studies using MDS 3.0 drug designing module with Multiple Linear Regression (MLR) , Principle Component Regression (PCR) and Partial Least Square Regression (PLS) analysis has been carried out. Among these three methods, PCR-model has come out with significant result as compare to other models. The best PCR QSAR model (r^2 = 0.8721, Fisher test value F = 40.67, Pred_r^2 = 0.654) has acceptable statistical quality and predictive potential as indicated by the value of cross validated squared correlation coefficient (q^2= 0.7123). From the build model it seems to be clear that SaaCHE-index, T_2_O_1, T_N_O_6 contribute positively while as SssCH2E-index descriptor negatively contributes to the biological activity. Thus this validated model brings important structural insight to aid the design of novel coumarins TNF- α inhibitor as anti-cancer agents.

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AS-38

Sulphonamido-Quinoxalines: Search for Anticancer Agent

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Abstract

A series of new sulphonamido-quinoxaline derivatives **3** (**a-p**) has been prepared and evaluated in vitro for antitumor activity against the NCI human cancer cell panel. The newly synthesized compounds **3b** (NSC: 763437), **3c** (NSC: 763438), **3e** (NSC: 763442), **3i** (NSC: 763441), **3j** (NSC: 763440), **3l** (NSC: 763439), **3n** (NSC: 763435) and **3p** (NSC: 763436) were evaluated in the National Cancer Institute for single dose in vitro primary cytotoxicity assay. Among the tested eight compounds, compound **3e** and **3l** were passed the criteria for activity in this assay and scheduled automatically for evaluation against the full panel of 60 human tumor cell lines at a minimum of five concentrations at 10-fold dilutions. With regard to the sensitivity against some individual cell lines the compound **3l** showed highest activity against Leukemia RPMI-8226 cell lines (GI_{50}: 1.11 μM) as compared to other tested compounds. Further docking study confirms the c-MET kinase inhibitory mechanism of the synthesized compounds. Lipinski's rule and in silico ADME pharmacokinetic parameters are within the acceptable range defined for human use thereby indicating their potential as drug-like molecules.

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AS-39

Pharmacophore-based 3D-QSAR Study of DPP IV Inhibitors

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Abstract

To design new compounds with enhanced activity against the DPP IV, 3D pharmacophore models were generated and QSAR study was carried out on 56 novel thiazolidide and related compounds, and series of (4-substituted prolyl) prolinenitriles, pyrolidine derivatives. A three-point pharmacophore with one hydrophobic (H) and one

acceptor (A) and one donar (D) as pharmacophore features was developed by PHASE module of Schrodinger molecular modeling suite. The pharmacophore hypothesis yielded a statistically significant 3D-QSARmodel, with a correlation coefficient of R^2 of 0.72for training set compounds. The model generated showed excellent predictive power, with a correlation coefficient of Q^2 of 0.50 and Pearson-R value of 0.71for a randomly choosen test set of thirteen compounds. The 3D-QSAR model explains the structure–activity relationship of these compounds which may help in the design and development of novel DPP IV inhibitor.

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AS-40

Analytical Characterization of Bioactive Fraction (USM) from *Sesbania sesban* L. (Merr) using GC-MS Technique

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Abstract

Analytical characterization was undertaken for the Unsaponifiable matter (USM) fractionated from pet ether extract of *Sesbania sesban using GC-MS technique.* The said fraction showed significant inhibition and selectivity for fertility & ovulation models. Perkin Elmer Autosystem XL Gaschromatograph equipped with Elite-5 capillary column and helium as carrier gas at a flow rate of 1ml/min was used for separation of the bioactives and further was analyzed using turbomass spectrometer operated in EI mode. Interpretation of mass spectrum was done using the database of National Institute Standard and Technology (NIST), WILEY8, and lipid library of American Oil Chemists' Society. The identification was made based on peak area, molecular formula and molecular weight. GC-MS profile of bioactive fraction (USM), showed the presence of Phytol (31%), Squalene (8%), 1-eicosanol (7%), Stigmasterol (9%), Stigmasta-5,22-dien-3-ol acetate (22%), and Ergosterol (3%) as major components. The literature study revealed that the major identified phytochemical compounds present in the fractions possess weak estrogenic activity and few of them were even used as precursor in the manufacture of many hormone used in contraceptives. The above results and analysis potentiate the findings and helps to understand the mechanism of action for antifertility activity of US

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AS-41

Application of HPTLC: An Overview

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Abstract

The objective of the present paper is to provide the inclusive information of HPTLC. In recent years HPTLC has gained wide applications in analysis. There are large number of developments and modifications in instrumentation of HPTLC. The present paper describe comprehensive application of the HPTLC for analysis of impurity profiling of drugs, assay of drugs and bioanalytical methods for analysis of drugs, analysis of phytoconstituents etc.

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