

CONTENT**REVIEW ARTICLE**

- **Deoxycholic Acid: A Review**
Kishu Tripathi and Shobha Kulshreshtha1

ABSTRACT

Inhibiting 11HSD2; mediate cortisol-dependent nuclear translocation and transcriptional activation of MR and are responsible at least for a part of the sodium retention and potassium excretion observed in patients with biliary obstruction; dose-dependent scratching of the injected site with the forepaws and hindpaws. Up to 100 µg of sodium deoxycholic acid, deoxycholic acid induced intestinal secretion in part by lowering mucosal permeability; DCA decreased adhesion of HCA-7 cells to the substratum and induced dephosphorylation of FAK at Tyrosine-576/577 (Tyr-576/577) and Tyr-925; inhibition of Clostridium botulinum, hyperproliferation of colonic crypt cells with an expansion of the proliferative zone, which is regarded as a biomarker of increased cancer risk; significantly increase tyrosine phosphorylation of catenin, induce urokinase-type plasminogen activator, uPAR, and cyclin D1 expression and enhance colon cancer cell proliferation and invasiveness, major impact on apoptotic mechanisms in colonic cells and this may be contributing to its effect as a tumor promoter.

KEY WORDS

Deoxycholic acid

RESEARCH ARTICLE

- **Simultaneous Spectrophotometric Estimation of Ofloxacin and Satranidazole in Tablet Dosage Form**
Wankhede SB, Prakash A and Chitlange SS9

ABSTRACT

Two accurate, precise, rapid and economical methods were developed for the estimation of Ofloxacin and Satranidazole in tablet dosage form. First method is first order derivative spectroscopy, wavelengths selected for quantitation were 259.0 nm for Ofloxacin (zero cross for Satranidazole) and 227.0 nm for Satranidazole (zero cross for Ofloxacin). Second method is area under curve method; area under curve in the range of 292.5-282.5 nm (for Ofloxacin) and 325.0-315.0 nm (for Satranidazole) were selected for the analysis. In both the methods linearity for detector response was observed in the concentration range of 5-40 µg/ml for Ofloxacin and Satranidazole, both. The proposed methods were successfully applied for the simultaneous determination of both drugs in commercial tablet preparation. The results of the analysis have been validated statistically and by recovery studies.

KEY WORDS

Ofloxacin; Satranidazole; derivative spectroscopy; area under curve method

- **Biological Activity of Some (2E)-Substituted-2-Ethylidene-5,6-Diphenylimidazo[2,1-b][1,3]Thiazol-3-(2H)-Ones**
Bhaskar VH, Kumar M, Balakrishnan BR and Sangameswaran B12

ABSTRACT

Certain (2E)-substituted-2-ethylidene-5,6-diphenylimidazo[2,1-b][1,3]thiazol-3-(2H)-ones (4a-f) have been synthesized by the condensation of 4,5-diphenylimidazo-2-thiones (3) with different aromatic aldehydes

and chloroacetic acid in presence of acetic anhydride, anhydrous sodium acetate and glacial acetic acid. These compounds were characterized by their analytical and spectral data. The title compounds were found to be efficient antibacterial agents on evaluation.

KEY WORDS: Imidazothiazole, Biological Activity, Antibacterial Activity

- **Stability Indicating RP- HPLC Method for Simultaneous Estimation of Valsartan and Amlodipine in Capsule Formulation.**
SS Chitlange, Kiran Bagri and DM Sakarkar15

ABSTRACT

Present work describes a precise, accurate and reproducible Reverse phase High Performance Liquid Chromatographic (RP-HPLC) method for simultaneous estimation of Amlodipine besylate (AMLB) and Valsartan (VAT) on RP C-18 Column (Kromasil, 250 x 4.6 mm) using acetonitrile: phosphate buffer (0.02M, pH 3.0), (56:44 v/v) as mobile phase at a flow rate of 1.0 ml/min and the detection wavelength was 234 nm. The retention time for AMLB and VAT was found to be 3.07 and 6.20 min, respectively. The method was also applied for the determination of AMLB and VAT in the presence of their degradation products formed under variety of stress conditions. Proposed method was validated for precision, accuracy, linearity range, robustness and ruggedness.

KEY WORDS Amlodipine besylate, Valsartan, Reverse phase High Performance Liquid Chromatography, Stability indicating method.

- **New Simple and Economical Spectrophotometric Method for Estimation of Artemether in Pharmaceutical Dosage Forms**
Shrivastava A, Nagori BP, Saini P, Issarani R and Gaur SS.....19

ABSTRACT

A new simple, sensitive, precise and economical spectrophotometric method of analysis for artemether both as a bulk drug and in capsule formulations was developed and validated. The method employed methanol as solvent and 1 N methanolic HCl was used to derivatize drug. This derivatized product was then estimated at 254 nm. The linear regression analysis data for the calibration plots showed good linear relationship with $r^2 = 0.9997$ in the concentration range 4-36 $\mu\text{g/ml}$. The mean value of correlation coefficient, slope and intercept were 0.9998 ± 0.000116 , 0.0307 ± 0.000133 and 0.0337 ± 0.001945 respectively. The method was validated for precision, accuracy and recovery studies. LOD and LOQ for artemether were found to be 0.2297 ($\mu\text{g/ml}$) and 0.696 ($\mu\text{g/ml}$) respectively. The method has been successfully applied in the analysis of marketed formulations.

KEY WORDS Spectrophotometric analysis, artemether

- **Phytochemical and Pharmacological Investigation of Roots of Syzygium Cumini (L) Skeel**
Nikhat F, D Satynarayana and Arun B Joshi.....22

ABSTRACT

The roots of *syzygium cuminii* (L) skeel was collected in Gulbarga district Karnataka. Dried and subjected for extraction with petroleum ether, chloroform the residue obtained after the evaporation of chloroform was taken for further study to isolate six chemical constituent present in it (ScRex-3, ScRex-4, ScRex-5, ScRex-6a, ScRex-6b, ScRex-2,) this constituent were subjected for structural elucidation by physical measurement and phyto-chemical study. The pharmacological study describe is restricted only to the antidiabetic activity of chloroform extract the result obtained is compared with standard used for

antidiabetic study for the measurement of glucose level in blood. The further study is in progress to isolate the above component in higher quantity and screen them for antidiabetic properties.

KEY WORDS *Syzygium cuminii*, Myrtaceae, Chloroform extract, antidiabetic

- **Spectrophotometric Methods for Simultaneous Estimation of Rabeprazole and Diclofenac from Combined Tablet Dosage Form**
RW Lohe, PB Suruse, MK Kale, PR Barethiya, AV Kasture and SW Lohe.....26

ABSTRACT

Two simple, accurate, economical and reproducible spectrophotometric methods for simultaneous estimation of Rabeprazole and Diclofenac in combined tablet dosage form have been developed. The first developed method employs formation and solving of simultaneous equation using two wavelengths 294.0 nm and 281.2 nm for formation of simultaneous equation. Second developed method involves graphical absorbance ratio, using two wavelengths. Both of these methods obey Beer's law in the employed concentration ranges for respective methods. Results of analysis were validated statistically and by recovery studies.

KEY WORDS Spectrophotometric estimation, Rabeprazole, and Diclofenac

- **RP-HPLC Method for Simultaneous Estimation of Simvastatin and Ezetimibe in Bulk Drug and its Combined Dosage Form.**
Nilesh Jain, Ruchi Jain, Hemant Swami and Deepak Kumar Jain.....29

ABSTRACT

This work is concerned with application of simple, accurate, precise and highly selective reverse phase high performance liquid chromatographic (RP-HPLC) method for simultaneous estimation of simvastatin and ezetimibe in combined dosage form. Chromatographic separation was achieved isocratically at 25°C ± 0.5°C on Luna C₁₈ column (250 x 4.6 mm i.d.) with a mobile phase composed of methanol: water: acetonitrile in the ratio of 75: 18.75: 6.25 % v/v/v at flow rate of 1.8 ml/min. Detection is carried out using a UV-PDA detector at 231 nm. The retention time of simvastatin and ezetimibe was found to be 13.5 ± 0.5 min and 4.02 ± 0.3 min. respectively. The method was found to be linear in the range of 1-50 µg/ml with mean recovery of 99.21% for simvastatin and 99.50% for ezetimibe. The correlation coefficients for all components are close to 1. The developed method was validated according to ICH guidelines and values of accuracy, precision and other statistical analysis were found to be in good accordance with the prescribed values. Thus the proposed method was successfully applied for simultaneous determination of simvastatin and ezetimibe in routine analysis.

KEY WORDS Simvastatin, Ezetimibe, R P- H PLC

- **Hepatoprotective Activity from Ethanol Fraction of Thuja occidentalis Linn.**
Sushil Kumar Dubey and Amla Batra.....32

ABSTRACT

Thuja occidentalis (Cupressaceae), commonly known as Arbor vitae or white cedar has been used in folk medicine to treat bronchial catarrh, enuresis, cystitis, psoriasis, uterine carcinomas, amenorrhoea and rheumatism and is mainly used in homeopathy as mother tincture. Extract of this plant has shown anti oxidant, anti viral, anti diarrhoeal activity since this plant contains flavonoids, tannins and polysaccharides. The aim of the present investigation was to evaluate the possible hepatoprotective activity of *Thuja occidentalis* aerial part. The hepatoprotective potential effect of ethanolic fraction of *Thuja occidentalis* has been assessed against CCL₄ induced liver damage in rats. A dose of EFTO 400 mg/kg p.o. exhibited

significant protection from liver damage in acute and chronic CCL₄ induced liver damage model. Histopathological examination was carried out after the treatment to evaluate hepato protection. The fraction was found to possess good hepatoprotective property.

KEY WORDS *Thuja occidentalis*, Hepato protection, Carbon tetra chloride

- **HPTLC Method Development and Validation for the simultaneous Estimation of Diosgenin and Levodopa in marketed formulation**
VB Kshirsagar, UA Deokate, VB Bharkad and SS Khadabadi36

ABSTRACT

The stationary phase silica gel G60F254 was selected for separation and the sample was developed using a mixture of Toluene: Ethyl acetate: Formic acid: GAA in the ratio 2:1:1: 0.75 v/v as mobile phase. Quantification was carried out at 194 nm for Diosgenin and 280 nm for Levodopa using absorbance reflectance mode. The R_f value of Levodopa and Diosgenin was found to be 0.27+0.2 and 0.61+0.2 respectively. Linearity was found to be in the concentration range of 100 to 700 ng/spot of Levodopa and 600 to 1800 for Diosgenin the correlation coefficient value is 0.9954 and 0.9934. The results of analysis were validated in terms of accuracy and precision. The LOD was found to be 1.03ng and 5.69ng of Levodopa and Diosgenin respectively. LOQ was found to be 3.14ng and 17.25ng/spot of Levodopa and Diosgenin respectively. The content uniformity test was carried out as per the USP specification. The proposed HPTLC method provides a faster and cost effective quantitative control for routine analysis of Levodopa and Diosgenin.

KEY WORDS Simultaneous estimation, Levodopa, Diosgenin, validation.

- **RP-HPLC Method for the Simultaneous Determination of Aspirin, Atorvastatin and Pioglitazone in Capsule Dosage Form**
Ismail, R Rajavel, M Ganesh, M Jagadeeswaran, K Srinivasan, J Valarmathi and T Sivakumar.....40

ABSTRACT

A simple, precise, accurate and rapid HPLC method has been developed, and validated for the determination of Aspirin, Atorvastatin and Pioglitazone simultaneously, in combined dosage form. Acetonitrile and phosphate buffer with pH 3.5 (40 %: 60 % v/v) is used as the mobile phase, 261nm is the detection wavelength for this study. The applicability of the method for simultaneous determination of Aspirin, Atorvastatin and Pioglitazone was verified by the determination of these compounds in marketed tablets. Results of the analysis were validated statistically, and by recovery studies (98.29 -101.12 %). The recovery and RSD values within the limits given in ICH guide lines method developments indicates that the suitability of proposed methods for the routine determination of these compounds in tablets. The validation parameters: linearity ($r > 0.996$), sensitivity (LOD $(1.5- 0.7 \times 10^{-4} \text{ mg ml}^{-1})$ and LOQ $(\% \times 10^{-4} -1.05 \times 10^{-4})$), accuracy (recoveries: 98.29 -101.12 %) and reproducibility were found to satisfactory. The proposed method can be successfully used to determine the drug contents of marketed formulation.

KEY WORDS RP-HPLC; Aspirin; Pioglitazone; Atorvastatin

- **Comparative analysis of Climbazole in Pharmaceutical Formulation**
J Vanitha, A Saravana Kumar, M Ganesh and VS Saravanan43

ABSTRACT

Climbazole is a member of the azole class of anti-mycotic, is often incorporated in several pharmaceutical forms and in shampoo formulation it is known to be effective against fungal infection on the scalp. This

paper describes a method to quantify climbazole in shampoo formulation by cylinder plate assay method and the HPLC method. The test organism used for the agar diffusion assay was *Candida albicans* ATCC10231. Three different concentrations of climbazole were used for the diffusion assay. A mean zone diameter was obtained for each concentration. A standard curve was obtained by plotting the three values derived from the zone diameter. A prospective validation of the method showed that the method was linear ($r = 0.9766$), precise (RSD = 2.45%) and accurate. The results obtained by the cylinder plate method was statistically evaluated by analysis of variance (ANOVA) and the results obtained indicate that there is no significant difference between these two methods.

KEY WORDS Climbazole shampoo, Microbiological assay, Cylinder-plate, *Candida albicans*

- **Quality Assessment of Kushta-e-Gaodanti: A Traditional Unani Medicine**
Nitin Dubey, Nidhi Dubey, RS Mehta, AK Saluja and DK Jain46

ABSTRACT

Kushta-e-gaodanti was prepared as per the method mentioned in Unani formulary. The raw materials, intermediates obtained during the preparation of kushta and the final product were characterized using modern analytical techniques like Fourier transform infra-red spectroscopy (FTIR), X-ray powder diffraction (XRPD) and thermo gravimetric analysis (TGA). The study shows that the mineral Gaodanti (calcium sulphate dihydrate) is converted into calcium sulphate hemi hydrate on first calcination in earthen pot sealed with the process gil-e-hikmat. Further on calcination this intermediate is transformed to kushta-e-gaodanti which is orthorhombic α -calcium sulphate anhydride. Kushta-e-gaodanti is a fine powder with particle size 7-8 micrometer, calcium content 29.32%, bulk density 0.928, tapped density 1.268, angle of repose 36.67° and the value of Carr's index is 47.08. Loss on drying at 110°C and loss on ignition was not more than 0.5 %w/w and 0.05% w/w respectively. Microbial load of the preparation was found negative for the presence of *Escherichia coli*, *Salmonella species* and *Staphylococcus aureus*. Total aerobic count was under acceptance limit. Trace element analysis of bhasma by ICP-OES revealed the presence of some other important metals like arsenic, lead, chromium, cadmium, mercury, tin under acceptable limits at prescribed dose.

KEY WORDS FTIR; calcination; Unani traditional medicine

SHORT COMMUNICATION

- **New Spectrophotometric Determination of Cefaclor in Bulk Drug and Synthetic Mixture**
Nagori BP, Pandey Ravindra and Shukla Shiv51

ABSTRACT

A simple, economic and reproducible spectroscopic method has been developed for the determination of cefaclor API and in its pharmaceutical formulations. The spectroscopic method is based on the formation of complex with p-di methyl amino benzaldehyde reagent having absorbance maxima at 484.4 nm. Optimization of reaction was carried out with the factors: buffer strength, reaction time, stability of complex, molar ratio of drug: reagent. The Beer-Lambert's law was followed in the range of 2.5-15 $\mu\text{g/ml}$.

KEY WORDS Cefaclor, Spectrophotometry, p -di methyl amino benzaldehyde reagent.

ADMINISTRATIVE, EDITORIAL, ADVERTISING AND SUBSCRIPTION OFFICE

Asian Journal of Research in Chemistry, E-282 'Saikripa' Sector-4, Pt. Deendayal Upadhyay Nagar,
Raipur 492010. (CG) India Phone No. +919406051618. E. mail: editor.ajrc@gmail.com

Website: www.ajrconline.org