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Determination of Cefditoren Pivoxil by high performance liquid chromatographic method in tablets

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Cefditoren pivoxil is a third-generation semi-synthetic cephalosporin antibiotic for oral administration. It is a prodrug which is hydrolyzed by esterases during absorption, and the drug is distributed in the circulating blood as active cefditoren. Cefditoren is used to treat uncomplicated skin and skin structure infections, community-acquired pneumonia, acute bacterial exacerbation of chronic bronchitis (ABECB), pharyngitis, and tonsillitis.

Various methods are available in the literature for the determination of cefditoren pivoxil in human plasma using HPLC, UPLC and spectrophotometry but in the present work an isocratic RP-HPLC method was proposed for the determination of cefditoren pivoxil in pharmaceutical formulations. Chromatographic separation was achieved by using a C-18 (250mm × 4.6mm i.d., 5 µm particle size) column of Shimadzu Model CBM-20A/20 Alite, equipped with SPD M20A prominence photodiode array detector, maintained at 25 °C. Isocratic elution was performed using acetonitrile and water as mobile phase. The overall run time was 10 min. and the flow rate of the mobile phase was 1.2 mL/min. with UV detection at 218 nm. 20 µL of sample was injected into the HPLC system. Linearity was observed in the concentration range of 1.0–250 µg/mL (R^2 = 0.999) and the method was validated as per ICH guidelines. The RSD for intra-day and inter-day precision were found to be less than 2 %. The percentage recovery was in good agreement with the labeled amount in the pharmaceutical formulations and the method is simple, precise, accurate and robust for the determination of Cefditoren pivoxil.

Liquid chromatographic method for the determination of Teicoplanin in parenterals

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An isocratic RP-HPLC method was proposed for the determination of Teicoplanin in pharmaceutical formulations (Injections). Teicoplanin is an antibiotic belonging to glycopeptides. . It is chemically Ristomycin A 34- O- [2-(acetylamino)-2- deoxy-.beta.- D-glucopyranosyl]- 22, 31- dichloro- 7- demethyl- 64- O-demethyl- 19- deoxy- 56- O-[2- deoxy- 2- [(8- methyl-1-oxononyl)amino]-.beta.- D- glucopyranosyl]- 42- O-.alpha.- D- mannopyranosyl . Isocratic elution was performed using tetra butyl ammonium hydrogen sulphate (0.1M) and acetonitrile as mobile phase. The overall run time was 10 min. and the flow rate of the mobile phase was 0.8 mL/min. with UV detection at 210 nm. 20 µL of sample was injected into the HPLC system. In the present work chromatographic separation was achieved by using a C-18 (250mm × 4.6mm i.d., 5 µm particle size) column of Shimadzu Model CBM-20A/20 Alite, equipped with SPD M20A prominence photodiode array detector, maintained at 25 °C. Linearity was observed in the concentration range of 1–200 µg/mL (R^2 = 0.9998) and the method was validated as per ICH guidelines. The RSD for intra-day and inter-day precision were found to be less than 2 %. The percentage recovery was in good agreement with the labeled amount in the pharmaceutical formulations and the method is simple, precise, accurate and robust for the determination of Teicoplanin.

Small molecule inhibitors of Bcl-2L10 protein for cancer therapy

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Cancer is a complex disease with uncontrolled growth and invasion (1). The vitalsignaling molecules in the survival pathways provide valuable targets for thedevelopment of novel anti-cancer drugs (2). The anti-apoptotic Bcl-2 family proteins are important from the point of view of targeted drug development as they are overexpressed in most cancers (3).The anti-apoptotic Bcl-2L10 protein structure was extensively studied by molecular modeling techniques (4 and the references therein). Structure based drug design and virtual screening technique were employed to design new inhibitors targeting Bcl-2L10. A series of Imines, Isatins and their analogues were selected for synthesis based on the binding scores and ADME properties. Thenew molecular entities (NME's) were synthesized using novel routesto probe the biological activity. The cytotoxicity of the NME'swas evaluated using MTT assay in HEK 293 cells.The cell death rate of NME's was found to be 60%, which is an excellent aspect for inhibiting cancer.