

Comparison of HPLC and MEEKC for Miconazole Nitrate Determination in Pharmaceutical Formulation

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Abstract	<p>A simple solid phase extraction (SPE) method coupled with high performance liquid chromatography (HPLC) using UV detector and microemulsion electrokinetic chromatography (MEEKC) has been developed and compared for the quantitative determination of miconazole nitrate in pharmaceutical formulation. For HPLC method, two parameters were optimized, namely, the wavelength and the mobile phases. The optimized condition was at the 225 nm wavelength and the mobile phase of ACN:MeOH (90:10 v/v). There are seven MEEKC parameters that were optimized, in this research, which were applied to voltage, temperature, wavelength, sodium dodecyl sulfate (SDS) concentration, buffer pH, buffer concentration and butan-1-ol concentration. The optimum MEEKC condition was obtained using 86.35 % (w/w) 2.5 mM borate buffer pH 9, 0.25 % (w/w) SDS, 0.8 % (w/w) ethyl acetate, 6.6 % w/w butan-1-ol and 6.0 % (w/w) acetonitrile. The combination of SPE using a diol column with HPLC-UV and the MEEKC methods were successfully applied for the determination of miconazole nitrate in a pharmaceutical formulation with the recovery percentage of 98.35 and 92.50 %, respectively.</p>
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