

## **Abstract**

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Title of master's thesis:

Analytical evaluation of drugs by using HPLC

For the development of chromatographic conditions for suprofen separation were used four conventional different C18 columns. Most suitable appeared column is LiChroCART 125-4 HPLC Cartridge R, LiChrospher 100 RP - 18, 5 mm. Many different mobile phases were used and the most appropriate was mobile phase consisting of acetonitrile and potassium phosphate aqueous buffer in ratio 35/65 with pH 3.03. By using this mobile phase suprofen's retention time was 7.8 minutes. We were also looking for a suitable internal standard. From a few used compounds as the best was chosen naproxen, which was eluted behind the peak of suprofen and provided a separated peak. Many conditions for the chiral separation of suprofen's enantiomers were tried. Finally, suprofen was separated by normal phase mode on a Chiralcel OD-R, 0.46 cm x 25 cm, from Daicel Chemical Industries using a mobile phase of hexane and propan-2-ol in a ratio of 98:2, with the addition of acetic acid at volume 0.6 millilitres, at a flow rate 0.5 ml / min, retention times take about 60 minutes. Analysis was reduced by increasing the flow rate up to 25 minutes. After that, a liquid-liquid extraction was performed to determine the yield of suprofen from plasma. The yield ranging was from 79-111%.