

# Abstract

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Title of master's thesis:

## **Evaluation of selected pharmaceuticals by HPLC with spectrophotometric detection**

A liquid-chromatographic method was developed for the simultaneous determination of dexpanthenol, phenoxyethanol, and preservatives (methyl-, ethyl-, propyl-, isobutyl-, and butylparaben). Separation of these compounds was performed on column Discovery C<sub>18</sub> (5 μm, 150 mm × 4.6 mm I.D.) by isocratic elution with a potassium dihydrogen phosphate buffer (0.01 mol l<sup>-1</sup>, pH adjusted to 2.5 with a phosphoric acid 85 %) and an acetonitrile (67:33, v/v) at the flow rate of 1.00 ml min<sup>-1</sup>. The injection volume of 5 μl was used. The diode array detector operated at two wavelengths (210 nm for dexpanthenol and 254 nm for phenoxyethanol and preservatives). Three basic system suitability parameters were evaluated: the number of the theoretical plates of all compounds was greater than 6000 units, determined symmetry factors of all peaks were in interval from 1.1 to 1.3, and calculated values of resolution were greater than 1.5. Accuracy, precision, linearity, specificity, and selectivity tests were satisfactorily performed. The method showed good recovery from 98.00 % to 101.00 % for all compounds. From the linearity experiment, the correlation coefficient was at least 0.99900 for all compounds. The method was successfully applied to the determination of dexpanthenol, phenoxyethanol, and preservatives in gel based on acrylamide.