The theoretical part comprises of following topics: skin barrier, properties of methylparaben and caffeine, brief introduction to transdermal absorption, description of the diffusion cells and methods for processing the results.

The results, obtained by permeation of methylparaben and caffeine from various donor media (TRIS buffer, TRIS buffer with propylenglycol, isopropylmyristate and isopropylmyristate with paraffin oil) through full-thickness pig skin, are presented in the following part of this thesis. Measured values of fluxes of caffeine J_{KF} were as follows: from TRIS buffer: 35,2 µg/cm².hod ±13,1, RSD 37,3%, from TRIS buffer with PG: 40,1 µg/cm².hod ±28,6, RSD 71,5%; from IPM: 2424,6 µg/cm².hod ±23,7, RSD 96,6%; from IPM and PO: 23,2 µg/cm².hod ±24,8, RSD 106,8%.

In the final part of my thesis, the individual results are summarised and processed, and the conclusion, that methylparaben is not a suitable marker for assessment of caffeine transdermal permeation from the media used, is drawn from them.

Keywords: Transdermal drug delivery, methylparaben, caffeine.