

## Abstract

The bachelor thesis was focused on the determination of active substances and their possible degradation products in medical preparation *Gelonida antineuralgica* from the 1940s. This preparation, prescribed as an analgesic, antineuralgic and antipyretic, constitutes a combination of three active pharmaceutical ingredients: acetylsalicylic acid, phenacetin, and codeine. Codeine was replaced by noscapine in some batches of this preparation. For the analysis of the historical sample, the method chosen was RP-HPLC with UV detection on an XBridge® BEH C18 column. Using standards of all four possible active substances, a gradient elution was first optimized using 0.1% aqueous ammonium acetate solution with pH = 6.00 as the aqueous phase and methanol as the organic one. The determination of the compounds was carried out by the calibration dependence method, and it was found that the preparation analysed contains (in relation to the quantity declared by manufacturer): 84.9% acetylsalicylic acid, 94.6% phenacetin, 112% noscapine. Further, salicylic acid was found to be present in an amount of 16.0 mg per tablet, which is probably a degradation product of acetylsalicylic acid.

**Keywords:** acetylsalicylic acid, degradation, codeine, noscapine, phenacetin, RP-HPLC, salicylic acid