Abstract

Historical pharmaceutical preparations analyzed in this thesis were a senna extract more than 200 years old, an ointment „Naso-Merfen“ 75 years old, and an ointment „Sulfathiazol“ 42 years old. The active substances in the analyzed samples were sennosides A and B (senna extract), ephedrine and menthol (the ointment „Naso-Merfen“), and sulfathiazole (the ointment „Sulfathiazol“). The senna extract was analyzed by RP-HPLC and HPLC-MS. Separation conditions were optimized, especially for separation of the sennoside A and B enantiomers. The active substances were not detected in the sample. One degradation product and substances characteristic for senna were identified. Their presence in the historical and contemporary sample was compared. Detailed ESI^{-}-MS^{n} fragmentation mechanisms of sennoside A and B have been proposed. The sample of the ointment „Naso-Merfen“ was analyzed by HILIC-UV, HPLC-MS, GC-MS, and AAS. Separation conditions were optimized. The active substances were quantified. Degradation products of the active substances were not detected in the sample. The sample of the ointment „Sulfathiazol“ was analyzed by RP-HPLC and HPLC-MS. Separation conditions were optimized. The active substance was quantified. Degradation products of the active substance were not detected. The authenticity of all analyzed historical samples was confirmed.

Key words: AAS, degradation, long-term stability, GC-MS, HILIC-UV, historical pharmaceuticals, mass spectrometry, HPLC-MS, HPLC-UV