

Abstract

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Title of the diploma thesis: Development of a HPLC method for quality control of food supplements based on valerian extract

In this diploma thesis, a new chromatography method for separation and determination of apigenin-7-glucoside, luteolin, acetoxyvalerenic acid, hydroxyvalerenic acid, valerenic acid, acevaltrate, and valepotriate in valerian extract was developed and validated. The chromatography method was subsequently used to determine the content of the active substances in food supplements: Advance Calmin, Allnature Kozlík bylinný extrakt, Anxiolan from Green-Swan Pharmaceuticals CR a.s., Barnys HypnoX forte from Biopol GN, Dr. Max Happy Sleep, Epiderma Spi v klidu, Kneipp Kozlík plus, NatureVia Sleepnox forte, Naturvita Antistres, Neospan forte od Simply You Pharmaceuticals a.s. and Terezia Spánek & Relax. To compare the content of substances, registered medicinal products were analyzed: Kneipp Kozlík 500 mg, Persen forte - Zentiva Group, a.s.. The method was also applied for quality control of liquid medicinal forms (drops, tinctures): Dr. Popov Kozlík lékařský, Green idea Kozlík lékařský extrakt and Tinctura valerianae from Česká Lékárna holding a.s.. For the analysis, Luna Omega PS C18 100 Å 150 x 2.1 mm; 1.6 µm particle size analytical column was used. The separation was carried out by gradient elution with mobile phase A: acetonitrile, mobile phase B: 0.1% phosphoric acid. The flow rate of the mobile phase was 0.4 ml/min at a constant temperature of 30 °C. The detection was performed by PDA detector at wavelengths of 218, 231, 255 and 340 nm.

Keywords: HPLC, apigenin-7-glucoside, luteolin, acetoxyvalerenic acid, hydroxyvalerenic acid, valerenic acid, acevaltrate, valepotriate, valerian