

Abstract

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Title of the diploma thesis: Quality control of food supplements with melatonin using separation methods

In this diploma thesis, an HPLC method was developed and validated for the simultaneous determination of melatonin and pyridoxine. The developed method was applied to the determination in food supplements, Tozax Sleep Trip (mcePharma s. r. o.), Clinical Melatonin B₆ syrup (Clinical nutricosmetics s. r. o.), Fast Sleep oral spray with melatonin (EmergoPharm Sp. z o. o. Sp. K.), Melatonin Rapid complex 5 mg ODT (Salutem Pharma s. r. o.), Allegra Melatonin 3 mg (Woykoff a. s.), Clinical Melatonin Forte (Clinical nutricosmetics s. r. o.), Melatonin 2 mg (Allnature s. r. o.), Melatonin new extra 5 mg (Nutricius s. r. o.), Clinical Melatonin B₆ Gummies (Clinical nutricosmetics s. r. o.).

The method was based on the use of a SUPELCO Ascentis Express C-18 chromatography column (100*4.6 mm, particle size 2.7 μm). The separation was carried out under gradient elution, using a mobile phase of acetonitrile and 0.085% phosphoric acid at pH 2.2, flow rate 1 ml/min and constant temperature 30°C.

A detection wavelength of 278 nm was chosen for melatonin and 290 nm for pyridoxine. The detection was performed using a diode array detector.

Keywords: melatonin, pyridoxine, HPLC, food supplements