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Abstract

Determination of two capsaicinoids in analgesic transdermal patches using RP-HPLC and UV spectroscopy

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Background and objectives: At the present time, a considerable frontier in the administration of therapeutic medications is transdermal drug delivery. **Methods**: In this study, a rapid, precise, sensitive and selective reversed-phase high performance liquid chromatography (RP-HPLC) method has been evaluated, developed and validated to separate and quantitate capsaicin and dihydrocapsaicin (main active agents) in analgesic dermal patches produced in Iran. **Results**: After isolation from laminated adhesive patches, capsaicinoids were analyzed on Lichrospher C_{18} analytical columns with reversed phase, using a mobile phase composition of methanol and distilled water (70:30 v/v) and without any buffer (pH=6.5). The flow rate was 1 mL/min and the UV detector was operating at 281 nm. The assay was found to be linear over the range of 0.1-1.0 mg/mL. All validation parameters were within the acceptable range. **Conclusion**: It seems that the developed method was fairly sensitive and reliable in measuring capsaicinoids in commercially available analgesic transdermal patches in Iran.

Keywords: analysis, capsaicin, natural product, RP-HPLC, transdermal patches, UV spectroscopy

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