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Submission

Authors	Dadan Hermawan		
Title	Development of Ketorolac Analysis in Pharmaceutical and Water Samples using Micellar Electrokinetic Chromatography		
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Title and Abstract

Title	Development of Ketorolac Analysis in Pharmaceutical and Water Samples using Micellar Electrokinetic Chromatography
Abstract	Quantitative determination of ketorolac, a nonsteroidal anti-inflammatory drug (NSAID) in pharmaceutical (tablet) and water samples was reported using the micellar electrokinetic chromatography (MEKC) method. The optimization of MEKC conditions was carried out by changing the sodium dodecyl sulfate (SDS) concentration, the borate buffer concentration (pH 9.3), and the applied voltage. The optimized MEKC method using 30 mM SDS, 10 mM borate buffer (pH 9.3), and an applied voltage of 30 kV has been successfully applied for the determination of ketorolac in tablet samples with analysis time less than 5 minutes. The average recovery of ketorolac in the tablet samples was 97.56% (RSD = 0.75%, $n = 3$). In addition, on-line preconcentration technique using normal stacking mode (NSM)-MEKC method was also applied for determination of ketorolac in water sample. The average recovery of ketorolac in tap water samples was 102.16% (RSD = 0.06%, $n = 3$). The proposed MEKC method is simple, short analysis time, high accuracy, and environmentally friendly.

Indexing

Academic discipline and sub-disciplines	Chemistry
Keywords	Ketorolac; Micellar electrokinetic chromatography; Normal stacking mode.
Language	en

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Development of Ketorolac Analysis in Water Samples using Micellar Electrokinetic Chromatography

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Keywords

Ketorolac; Micellar electrokinetic chromatography; Water sample

Abstract

Quantitative determination of ketorolac, a nonsteroidal anti-inflammatory (NSAID) in water samples was reported using the micellar electrokinetic chromatography (MEKC) method. The on-line preconcentration technique at MEKC was then investigated to increase the detection sensitivity of ketorolac. A 6-fold increase in sensitivity factor was achieved using normal stacking mode (NSM)-MEKC. The average recovery of ketorolac in tap water samples was 102.16% (RSD = 0.06%). The current NSM-MEKC method is simple, has short analysis time, high accuracy, and uses fewer organic solvents (environmentally friendly).

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