

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)Author:  [ADVANCED](#) | Volume  Page   
Keyword:   |   [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-2246

PRINT ISSN : 0910-6340

**Analytical Sciences**

Vol. 26 (2010) , No. 6 p.703

[\[PDF \(757K\)\]](#) [\[References\]](#) [\[Supplementary Materials\]](#)**Analyses of Non-steroidal Anti-inflammatory Drugs in Environmental Water Samples with Microemulsion Electrokinetic Chromatography**[Yu-Ling KUO<sup>1\)</sup>](#), [Wan-Ling LIU<sup>1\)</sup>](#), [Shih-Huan HSIEH<sup>1\)</sup>](#) and [Hsi-Ya HUANG<sup>1\)</sup>](#)*1) Department of Chemistry and Center for Nano Technology at CYCU, Chung Yuan Christian University***(Received January 21, 2010)****(Accepted March 12, 2010)**

In this study, a microemulsion electrokinetic chromatography (MEEKC) was used to analyze ten non-steroidal anti-inflammatory drugs (NSAIDs) in water samples. The type and ratio of organic modifiers were found to be the predominant influences on the NSAIDs separation. Subsequently, field-amplified sample injection was coupled with this MEEKC method in order to enhance the detection sensitivity. When both the acid plug (3 s) and water plug (5 s) were placed at the front of the capillary, and the acetonitrile (ACN) solvent was added to the water plug (10% ACN) and the sample matrix (15% ACN), the separation time was shortened to 15 min, as well as the limit of detection (LOD) of these NSAIDs was reduced to the range of 0.03 to 0.3  $\mu\text{g/L}$ , which provided about a 1400-fold to 6100-fold enhancement in LOD. Finally, the proposed on-line concentration MEEKC method also successfully determined the NSAIDs residues in water samples after solid-phase extraction.

[\[PDF \(757K\)\]](#) [\[References\]](#) [\[Supplementary Materials\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

doi:10.2116/analsci.26.703

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