

Determination of Parabens in Anti-inflammatory Medicines

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Keywords: parabens, medications, capillary electrophoresis.

ABSTRACT

Parabens are preservatives used in medicines, but there is evidence that some parabens have activity as endocrine disruptors. A capillary electrophoresis method was optimized to quantify butyl (BP), propyl (PP), ethyl (EP) and methyl (MP) parabens in anti-inflammatories containing as active ingredient ketoprofen or prednisolone. LOD and LOQ were estimated as 3 and 10 mg/L, respectively. Linearity was evaluated at a concentration range from 10 to 100 mg/L, and good coefficients of correlation ($r > 0.99$) were obtained for all parabens. Recovery was estimated by fortified samples prepared in three replicates at 10, 50 and 100 mg/L of each paraben and values ranged from 95 to 106% for ketoprofen and from 86 to 118% for prednisolone medications. Precision ($n=3$) varied from 0.2 to 6.4% and 0.3 to 6.3 %, in ketoprofen and prednisolone medicines, respectively. This method will be used to quantify parabens in pediatric medicines aiming to assess exposure to these compounds.

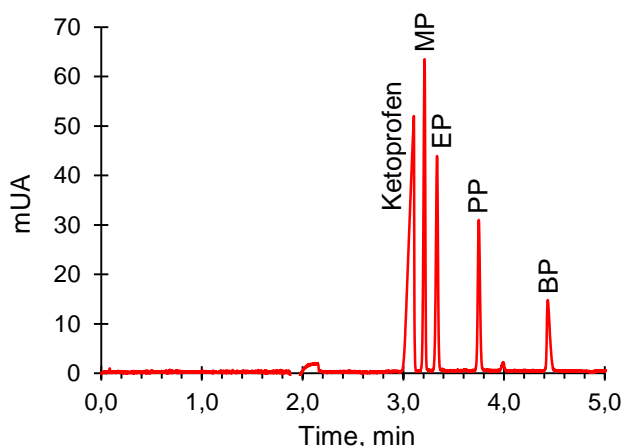


Figure 1. Ketoprofen medication fortified with 50 mg/L each paraben. Conditions: Uncoated fused-silica capillary with 38.5 cm total length; Electrolyte: 20 mmol/L sodium tetraborate (pH 9.2) and 30 mmol/L SDS; Injection: 50 mbar/3 s; Applied voltage: 30 kV; Detection: UV, 298 nm.

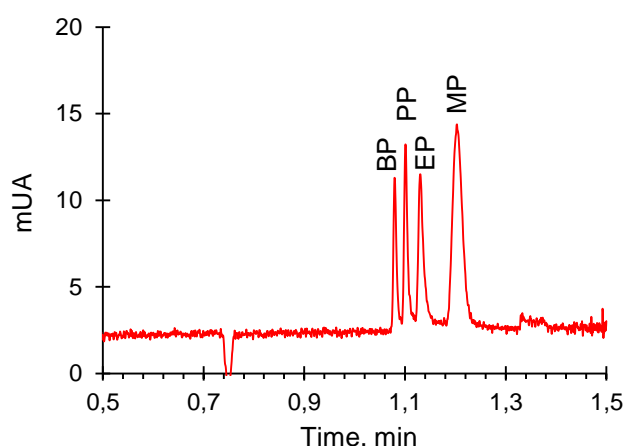


Figure 2. Prednisolone medication fortified with 50 mg/L each paraben. Conditions: Uncoated fused-silica capillary with 38.5 cm total length; Electrolyte: 20 mmol/L sodium tetraborate (pH 9.2); Injection: 50 mbar/3 s; Applied voltage: 30 kV; Detection: UV, 298 nm.

ACKNOWLEDGEMENTS

Programa Unificado de Bolsas (PUB-USP)

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