



Capillary electrophoresis method for determination of three nonsteroidal anti-inflammatory drugs in pharmaceutical formulation

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Capillary electrophoresis with diode-array detection method (CE-DAD) was optimized and validated for determination of pharmaceutical formulations of nonsteroidal anti-inflammatory (NSAID), *i.e.* ketoprofen, fenbufen and naproxen. The optimal conditions for the separation were found to be a 35 mM Phosphate buffer at pH 7.0 and a separation voltage of 12 kV. Detection was set at 214 nm. All analytes were separated using capillary tubing of 32.5 cm x 75 μm i.d. The method was validated in terms of linearity, limit of detection (LOD), limit of quantification (LOQ), precision (repeatability) and accuracy (recovery). Good linearity was achieved for all analytes ($r^2 > 0.99$) in the concentration range of 6.00–30.00 mgL^{-1} . The LODs (1.00–1.80 mgL^{-1}) and LOQs (2.50–5.20 mgL^{-1}) for all analytes were obtained. Intra-day and inter-day precision in terms of %RSD (n=12) less than 2%. The proposed method was successfully applied for the determination of three NSAIDs for pharmaceutical formulation. Recoveries of all NSAIDs from pharmaceutical formulation sample were in the ranges of 90.02–103.10%.

Keywords: Capillary electrophoresis; NSAIDs; pharmaceutical formulation