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## Performance review of a fast HPLC-UV method for the quantification of chlorogenic acids in green coffee bean extracts

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### Abstract

The aim of this study was to test the performance of a HPLC method, designated for rapid quantification of chlorogenic acids (CGA) in green coffee extract (GCE). The precision statistics associated with the method were assessed using three independent laboratories with five samples analyzed in triplicate. Seven main CGA isomers (3-CQA, 5-CQA, 4-CQA, 5-FQA, 3,4-diCQA, 3,5-diCQA and 4,5-diCQA) were quantified. The concentration of total CGA in the samples varied from 32.24 to 52.65 % w/w. The repeatability and reproducibility standard deviations for the determination of individual isomers varied, respectively, from 0.01 to 0.28 and 0.05 to 1.59. The repeatability and reproducibility standard deviations of the calculated total CGA, corresponding to the sum of the seven main CGA isomers, varied respectively, from 0.17 to 0.58 and 0.55 to 2.01. The fast HPLC method evaluated in this study was considered precise and appropriate for the determination of CGA in GCE.

### Abbreviations

3-CQA, 3-Caffeoylquinic Acid; 3,4-diCQA, 3,4-Dicaffeoylquinic Acid; 3,5-diCQA, 3,5-Dicaffeoylquinic Acid; 4-CQA, 4-Caffeoylquinic Acid; 4,5-diCQA, 4,5-Dicaffeoylquinic Acid; 5-CQA, 5-Caffeoylquinic Acid; 5-FQA, 5-Feruloylquinic Acid; CGA, Chlorogenic Acids; CQA, Caffeoylquinic Acid; diCQA, Dicaffeoylquinic Acid; FQA, Feruloylquinic Acid; GCE, Green Coffee Extract; HPLC, High-Performance Liquid Chromatography.

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