



## QUANTITATIVE DETERMINATION OF QUERCETIN IN *GINKGO BILOBA* LEAF EXTRACT (EGb 761) USING GC-MS

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### ABSTRACT

*Ginkgo biloba* leaf extract (EGb 761) is one of the highest selling herbal medicinal products in the world. Quercetin, 2- (3, 4-dihydroxyphenyl)-3, 5, 7-trihydroxy-4H-chromen-4-one, is a flavonoid in *Ginkgo biloba* leaf extract that is partly responsible for many of its medicinal properties. The determination of percentage composition of quercetin is very important because quercetin is a vital component of flavonoids that are used for the standardisation of EGb 761 and other *Ginkgo biloba* products. Preliminary assessment using reversed phase high performance liquid chromatography with photodiode array detector (RP-HPLC-PDA) revealed the presence of this analyte at 11.5%, but with a rather high intra-day precision measured as percent relative standard deviation (%RSD) of 6%. The extract was then subjected to analysis using gas chromatography-mass spectrometry (GC-MS) and a better repeatability of <2% was obtained. The GC-MS method was then adopted for the determination of quercetin in EGb 761. The average concentration of this analyte in the extract was 12.53% using a three point calibration ( $R^2 > 0.99$ ). The average recovery, as a measure of method accuracy was 101.6%. These results indicate that the GC-MS method was very suitable for the accurate and precise determination of quercetin in the studied matrix.

**Keywords:** *Ginkgo biloba*, chromatography, mass spectrometry, Quercetin

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