

A high-performance thin-layer chromatography method for quantitative determination of quercetin in herbal products

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Background and Aims: With increasing consumption of herbal products in the world and general belief in their safety, there are several adverse effects and interactions with other medications may occur. Inappropriate and inadequate labeling on herbal drugs can cause more hazards and confusion to the patients that lead to improper use of this kind of medicines, therefore it seems essential to control the quality of herbal drugs in order to more safety in their consumption and guarantee their effectiveness. High-performance thin-layer chromatography (HPTLC) method is a specific and accurate method for quality controls of natural products in herbals.

Methods: A new precise HPTLC method was developed and used in the present analysis for quantification of quercetin as a routine flavonoid in the herbal drugs that collected from Isfahan pharmaceutical market. HPTLC method was carried out on precoated TLC aluminium plates with silica gel 60G as stationary phase using ethyl acetate: formic acid: glacial acetic acid: water (100-11-11-26) as the mobile phase. Densitometric determination of quercetin in samples was carried out at 254 nm and 366 nm.

Results: The quercetin contents in our samples were in the mentioned ranges of their labeling and brochures.

Conclusions: The present study is being reported first time and may be used for quality controls of the herbal products. This HPTLC method was found to be simple and fast for screening of quercetin and other natural pure flavonoids and their quantifications in herbals.

Keywords: Herbal products, Quality control, HPTLC, Quercetin