

Determinação de isoflavonas em formulações farmacêuticas

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Phytoestrogens are natural compounds of plants with estrogenic activity. They are being widely investigated in the prevention of chronic coronary diseases, in prostate and breast cancer, in the reduction of osteoporosis risk and relief of menopause symptoms. Among phytoestrogens already in use are daidzein, genistein and glycitein and they are present in complex matrix such as phytopharmaceuticals, plant extracts, capsules and tablets. These preparations require development and validation of methodologies for quantitative determination of isoflavones. The proposed methodologies include high performance thin layer chromatography (HPTLC) and high performance liquid chromatography (HPLC). The HPTLC coupled with densitometry can be used for quantitative analysis. The mobile phase constituted of ethyl acetate:hexane (8:2 v/v) was used to determine chromatographic profiles of isoflavone aglycones, daidzein, glycitein and genistein. The mobile phase constituted of ethyl acetate:toluene:formic acid (8:1:1 v/v/v) was used for determination of isoflavones glycosides and non-glycosides. For the quantitative determination of isoflavone glycosides with HPLC, an acid hydrolysis with 3M HCl and heating in water-bath for an hour was proposed as sample pretreatment step. The analytic determination of isoflavones daidzein, genistein, formononetin and biochanin A using HPLC was accomplished. The chromatography was carried out in isocratic mode with Chromolith[®], a monolithic RP-18 column, (100x4.6mm) with mobile phase constituted of water:acetonitrile (6:4 v/v) operated at a flow rate of 0.6mL/min and detection was made at 260nm. The results showed method linearity with correlation coefficient of 0.9995 to daidzein, 0.9996 for genistein, 0.9997 for formononetin and 0.9999 for biochanin A. The precision and accuracy data presented satisfactory results. Good resolution and faster separation of compounds in pharmaceutical formulations were also obtained. The proposed method can be used in the routine analyses of phytopharmaceuticals in quality control laboratories.

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