QUANTITATIVE ESTIMATION OF 6-GINGEROL, *E*-GUGGULSTERONE AND *Z*-GUGGULSTERONE IN A FIXED DOSE COMBINATION NANOEMULGEL BY RP-HPLC

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ABSTRACT

Polyherbal formulations have proved to be efficacious for the therapeutic treatment of various diseases. However, the development of validated robust analytical methods for quantification is a major challenge. The aim of this project was to develop a simple analytical method for the quantification of 6-gingerol (6-GIN), *E*-guggulsterone (*E*-GGS) and *Z*-guggulsterone (*Z*-GGS) in nanoemulsion based gel using reverse phase high performance liquid chromatography (RP-HPLC). 6-GIN, *E*-GGS and *Z*-GGS were quantified using acetonitrile: water: methanol (70:20:10 V/V/V) as the mobile phase at 1.0 mL min^{-1} flow rate with photodiode array detection. The developed method was validated for linearity, accuracy, precision, specificity and robustness as per ICH Q2 (R1) guidelines. The drug content of the three actives in the developed nanoemulgel was found to be between 90% to 110% w/w. The developed analytical method is simple and can be used for quantification of 6-GIN, *E*-GGS and *Z*-GGS in fixed dose product containing these actives.