Box-Behnken Design and Molecular Docking Assisted Quenching Spectrofluorimetric Method for the Quantitation of Citalopram HBr in Commercial Dosage Forms

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Abstract A simple, sensitive and accurate spectrofluorimetric method was presented for the determination of citalopram hydrobromide (CTM) in tablets. The method was based on the quenching of bovine serum albumin (BSA) fluorescence with CTM at pH 7.4. The fluorescence intensities were measured at 342 nm after excitation at 279 nm. Various factors affecting the quenching of BSA fluorescence were optimized by response surface methodology (RSM) through Box-Behnken design (BBD. The plot of F0/F versus CTM concentration was linear in the concentration range of 10-100 mu g mL-1. The limit of detection (LOD) and limit of quantitation (LOQ) were 2.08 and 6.30 mu g mL-1, respectively The molar combining ratio between CTM and BSA was 1:1. The complementary modified green analytical procedure index (ComplexMoGAPI) was 90%. The effect interference of common excipients found in tablets was investigated. Percent recoveries of CTM was ranged from 99.92 to 100.27% in tablets.

Keywords **Author Keywords:** Citalopram HBr; Quenching; Box-Behnken design; Molecular docking; ComplexMoGAPI
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