ABSTRACT

Silymarin is used to treat liver and gallbladder problems. The main purpose of this research is to develop a cost-effective, sensitive, selective, simple, and effective analytical approach for the quantitative determination of the active ingredient of Silymarin in different brands of pharmaceutical formulation and in blood plasma in humans by using UV spectrophotometry and the HPLC-PDA method. For UV Spectroscopy, the measurement was performed at 285 nm in acetonitrile as the solvent, and for RP-HPLC, a combination of ACN and water in the ratio of 80:20 (%v/v) was used. Thermo Scientific ODS Hypersil C18 (250×4.6 mm, 5µm) column was used for the RP-HPLC separation at room temperature with a 1.0 ml/min Mobile Phase flow rate. The suggested approaches were approved in accordance with ICH guidelines. Both techniques were linear, accurate, reliable, and demonstrated specificity under all stress situations that were used. The validated techniques were effectively used for the quantitative measurement of the active ingredient of Silymarin in human blood plasma and prescription doses. The result shows that only the Abbott brand are acceptable according to ICH guidelines and are high-quality products with complete efficacy. while the other marketed brands have poor quality product with inefficacy.