

Gliquidone (GQ) is an oral hypoglycemic agent, belongs to second generation sulfonylurea derivatives. New high-performance thin-layer chromatography (HPTLC) and ultra-performance liquid chromatography (UPLC) methods have been developed and validated and used for complete stability study of GQ following ICH guidelines. GQ was subjected to stress and forced degradation under hydrolytic, oxidative and photolytic conditions. The drug was found to be unstable under acidic, alkaline and oxidative conditions with the formation of gliquidone sulfonamide (GQS) while, a marked stability was confirmed under thermal and photolytic stress conditions. GQS is the British pharmacopeial impurity A of GQ and also considered as its synthesis intermediate. The developed chromatographic methods have been utilized for expecting the degradation behavior of GQ under the studied conditions and then used for quantitation of GQ and GQS either in their pure forms or in laboratory prepared mixtures. The methods were successfully applied to GQ in pharmaceutical formulation. The methods have the advantages of being sensitive and less time consuming compared to the reported methods. The obtained results were statistically compared to a reported HPLC method showing no significant difference regarding both accuracy and precision.