DEVELOPMENT AND VALIDATION BY RP-HPLC METHOD FOR THE ESTIMATION OF PIPERINE COENZYME Q10 IN BULK AND PHARAMCEUTICAL DOSAGE FORM

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ABSTRACT:

Safety is the fundamental principle in the provision of pharmaceutical products for health care of human being. Nutritional supplements used in medical practice are gaining considerable momentum in the world during the past decades. But this supplement is needed to be analysed before releasing in market to avoid any complications. A combination of piperine and coenzyme Q10 is used as nutritional supplement. As no analytical method has been developed for their simultaneous estimation a simple, specific, sensitive, precise and accurate RP-HPLC method was developed for the determination of CoQ10 and piperine in bulk or pharmaceutical dosage form. Coenzyme is very popular for its antioxidant property for protecting LDL from oxidation and piperine maintains cardiovascular system and increases bioavailability of coenzyme Q10. In this developed method, Waters X Bridge C8 column (250mm x 4.6mm,5µm) was used as a stationary phase and acetonitrile, tetrahydrofuran(THF), and water used in 65:32:3 (v/v) ratio as mobile phase with 1 ml/min flowrate with PDA detector detection at 275nm. The RP-HPLC was developed according to ICH guideline parameters. The retention times of Coenzyme Q10 and Piperine were 4.56 and 8.19 min respectively. The linearity ranges have lied between 4-6µg/ml, 240-360µg/ml. Correlation coefficient for both is 0.997. The present successfully validated method was applicable for the assay of piperine and coenzyme Q10 in bulk and pharmaceutical dosage forms.

KEYWORDS: Reverse phase HPLC, nutritional supplement, coenzyme Q10, piperine, PDA detector