International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.12, No.03, pp 99-105 2019

Development and Validation of High Performance Liquid Chromatographic Method for Estimation of Brimonidine Tartrate as bulk drug and in Ophthalmic Formulation

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Abstract : Glaucoma is complex disease characterized by ocular hypertension with a progressive visual loss that could resist in blindness due to damage occurred to optic nerve. Brimonidine tartrate is commonly used drug in glaucoma therapy which is selective alpha 2 adrenergic agonist. The reverse phase high performance liquid chromatographic method was developed and validated for estimation of brimonidine tartrate in bulk drug and pharmaceutical dosage form. Better separation was achieved on Kromasil C 18 (250 mm X 4.6 mm i.d., 5 µm particle size) column using isocratic elution program with mobile phase citric acid monohydrate buffer : water: methanol (30:50:20 v/v/v) and pH 3 was maintained by using triethylamine. The flow rate was 1.0 ml/min. Elute was detected at 246 nm and it effectively separated at retention time of 6 minutes. The developed method was successfully validated according to ICH guidelines. The method was validated for linearity, accuracy, specificity, precision and robustness. The LOD and LOQ was 1.47 and 4.47 µg/ml respectively. The optimized and validated method can be used for estimation of brimonidine tartrate in bulk and in ophthalmic formulation.

Key words : Brimonidine Tartrate, Reversed phase-HPLC.

Barse Rohan *et al* /International Journal of PharmTech Research, 2019,12(3): 99-105.

DOI: http://dx.doi.org/10.20902/IJPTR.2019.120312

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