Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2020, 9 (4): 567-574

(International Peer Reviewed Journal)

Determination of Eletriptan Hydro Bromide in pure and Pharmaceutical Formulations Using Cobalt Thiocyanide and Citric Anhydride by Spectrophotometric Method

M.L.N. Acharyulu[1]*, P.V.S.R. Mohana Rao[2] and I. Siva Ramakoti[3]

1. Centurion University of Technology and Management, Andhra Pradesh- 530017, **INDIA**
2. Department of Engineering Chemistry, A.U.College of Engineering (A), Visakhapatnam-530003, **INDIA**
3. Department of Chemistry, Centurion University of Technology and Management, Odisha- 761211, **INDIA**

Email: acharyulu@cutmap.ac.in

Accepted on 20th July, 2020

ABSTRACT

Two visible spectrophotometric methods were developed A and B for the determination of Eletriptan hydrobromide in pure and pharmaceutical formulations. Method A is based on the formation of co-ordination complex of tertiary amine of EHB (electron donor) and the central metal of the cobalt thiocyanate (acceptor) and Method B is based on internal salt formation involving aconitic anhydride (dehydration product of CiA) and the tertiary amine of EHB. The coloured products exhibit absorption λ_{max} at 623 nm and 546 nm for methods A and B respectively. Regression analysis of Beer-Lambert plots showed good correlation in the concentration ranges 4-24 µg L^{-1}, correlation co-efficients are 0.9886(A), 0.9877(B) respectively. The Sandell's sensitivities are 2.7739 $x10^{-3}$, 1.9933x 10^{-3} (1 mole cm^{-1}) and molar absorptivity values are1.6706 $x10^{5}$, 2.3248 $x10^{5}$(µg cm^{-2}).The proposed methods are applied to commercial available formulations and the results are statistically compared with those obtained by the UV reference method and validated by recovery studies.

High Lights:

- The results are found satisfactory and reproducible.
- These methods are applied successfully for the estimation of the EHB in the presence of other ingredients that are usually present in formulations.
- These methods offer the advantages of rapidity, simplicity and sensitivity and low cost without the need for expensive instrumentation and reagents.

Keywords: Coordination complex, Dehydration Product, Tertiary Amino group, Regression Analysis.