CHEMOMETRICS OPTIMIZED GREEN LIQUID CHROMATOGRAPHY METHOD FOR SIMULTANEOUS ESTIMATION OF PREGABALIN AND ETORICOXIB IN COMBINED TABLET FORMULATION

Sagar S. Panda[a]*, Pratap C. Routa[a] and Ravi Kumar V.V. Bera[a]

(Received 18 February 2022) (Accepted 11 April 2023)

ABSTRACT

Pregabalin and etoricoxib have been recently approved as a potent fixed-dose combination to treat patients with neuropathic back pain effectively. The present investigation quantified both drugs by using a liquid chromatography method using principles of analytical quality-by-design. We assessed the risks, sorted critical method variables and studied their influence on critical analytical attributes using the Box-Behnken design. The optimal chromatographic solutions used acetonitrile: 10 mMol L^{-1} phosphate buffer of pH 3.51 (70:30 V/V) as the mobile phase. A C-18 column (250 mm × 4.6 mm, 5 µm) with mobile phase flow at 0.9 mL min^{-1} was used to achieve separation. The developed method's specificity, linearity, accuracy and precision were fair. Furthermore, the method was selective and recovered both analytes to their maximum extent. Additionally, the national environmental methods index approach revealed superior method greenness of the used method for routine quantification of pregabalin and etoricoxib from pharmaceutical samples.