Chemiluminescence assay of promethazine hydrochloride using acidic permanganate employing flow injection mode operated with syringe and peristaltic pumps. Sultan, Salah M.; Hassan, Yousif A. M.; Abulkibash, Abdalla M.. The Chemistry Department, King Fahd University, Dhahran, Saudi Arabia. Talanta (2003), 59(6), 1073-1080. Publisher: Elsevier Science B.V., CODEN: TLNTA2 ISSN: 0039-9140. Journal written in English. CAN 139:219479 AN 2003:290050 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

For the 1st time, promethazine hydrochloride chemiluminescence emission was monitored. The paper describes a new, specific, and highly sensitive flow injection (FI) method for the detn. of promethazine hydrochloride using both a peristaltic and a syringe pump. The method was based on the chemiluminescence emission intensity produced as a result of its oxidn. reaction with permanganate in sulfuric acid medium. Reaction variables were thoroughly investigated employing chemometrical methods with few no. of expts. The optimum system and chem. conditions were 2.1519×10-4 mol l-1 permanganate in 0.01 mol l-1 sulfuric acid when operating the peristaltic pump at a flow rate of 45 μl s-1 and injecting the drug by a syringe pump operated at a speed of 40 μl s-1. The method was found to be applicable in the concn. range of promethazine hydrochloride between 1.558×10-5 and 1.8697×10-3 mol l-1 with a linear calibration plot of 0.992 correlation coeff. and the following equation: I=92.74+0.08048C. The method adopted proved to be highly suitable for the assay of promethazine hydrochloride in drug formulations without fear of interferences in dosage form.