



Simple High Performance Liquid Chromatography Method for Determination of Benzalkonium Chloride Homologues in Nasal Preparations

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SUMMARY. A High-Performance Liquid Chromatography method was developed for quantification of benzalkonium chloride (BAC) and separation of three major homologues, in nasal preparations. Chromatography separation was carried out on a CLC-cyano column, using 0.075M acetate buffer with acetonitrile (45:55, v/v) pH = 5.0, as mobile phase, in an isocratic elution. The total run time was 20 min at a flow rate of 1.0 mL/min. The retention times were of 10.0, 12.8 and 16.1 min, respectively, for homologs C₁₂, C₁₄ and C₁₆ of benzalkonium chloride. About precision, the method presented excellent repeatability and satisfactory precision intermediate, and the coefficients of variation found were 1.73 and 4.51%, respectively. The accuracy values were ranging from 100.86 to 110.99%. The lower limits of quantification and detection were 5 µg/mL and 2.5 µg/mL, respectively. Two out of seven analyzed lots contained less BAC than allowed.

KEY WORDS: Benzalkonium chloride, High performance liquid chromatography, Pharmaceutical preparations.

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