SIMULTANEOUS DETERMINATION OF PHENYLPROPANOLAMINE-HCl, DOXYLAMINE SUCCINATE, CHLORPHENIRAMINE MALEATE AND DEXTROMETHORPHAN-HBr IN COUGH MIXTURES BY REVERSED-PHASE, ION PAIR-HIGH PERFORMANCE LIQUID CHROMATOGRAPHY.

BY

KAMAL AYOUB MOMANI

B.Sc IN CHEMISTRY, 1980

Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of M.Sc in Chemistry at Yarmouk University

Dr. Suleiman Sa'sa
Dr. Ibrahim Jalal
Dr. Fatima Esmadi
Dr. Amin T. Haji-Hussein

This Thesis was Under the Direct Supervision of Dr. Suleiman Sa'sa and Dr. Ibrahim Jalal.

28/7/1986.
ABSTRACT

A new ion-Pair reversed-phase high performance liquid chromatography (HPLC) assay was developed for simultaneous analysis of Phenylpropanolamine-HCl (I), doxylamine succinate (II), chlorpheniramine maleate (III), and dextromethorphan-HBr in cough-cold syrups. The separation was carried out using Whatman Partisil-5-C8 column (25.0 cm x 4.6 mm i.d.) and a mobile phase of 0.007 M of dioctyl sulfosuccinate in acetonitrile/methanol/water/THF/85% H3PO4 (370:300:300:30:0.7 V/V) with pH adjusted to 4.0 by NH4OH. The internal standard was dextropropoxyphene-HCl. Micrograms injected versus peak area ratio (at 258 nm) plots in the ranges of 1.75-10.5 μg/mL for I, 0.20-1.0 μg/mL for II and III, and 1.25-6.25 μg/mL for IV were linear. The detection limits were 2.62 ng for I, 3.0 ng for II and III, and 18.8 ng for IV. The chromatogram was completed in 4.5 min. The new HPLC method was applied on 9 commercial cough-cold syrups for the assay of I-IV. All active drugs except I were separated from excipients. Thus a chemical treatment is required to extract the interfering excipients with I. The developed HPLC method was selective, fast and sensitive.