CAPSULES
preliminary notes and applications from Bioanalytical Systems, Inc.

Determination Of Oxytocin In Pharmaceutical Samples

Purpose
Quantitative analysis of oxytocin (F1) in pharmaceutical samples. A rapid and accurate method of determining the amount and purity of oxytocin synthesized by the pharmaceutical industry was needed.

Existing Methods
Bioassays based on administering oxytocin compounds to animals and measuring some aspect of their physiological effect, such as blood pressure, uterine contractions, or milk ejection pressure. These are tedious, imprecise, and time-consuming.

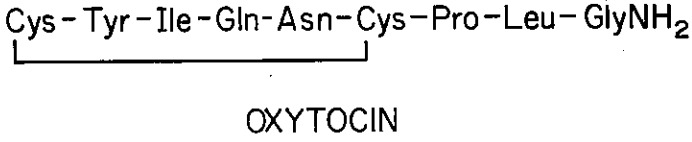
Reference
Quantitative Analysis of Oxytocin in Pharmaceutical Preparations by High-Performance Liquid Chromatography, M. Ohta, H. Fukuda, T. Kimura and A. Tanaka, J. Chromatogr., 402(1987) 392-395.

Conditions
Detector: UV, 210 nm
Sensitivity: 0.04 a.u.f.s.
Column: 5 µm Zorbax TMS (250 x 4.6 mm), temperature controlled at 40°C
Mobile Phase: acetonitrile: 50 mM phosphate buffer (pH 5.0) 18:82. Flow rate was 1 mL/min.
Linear Range: 0.2 - 20 I.U./mL

Sample Preparation
Commercially prepared oxytocin and ethyl p-hydroxybenzoate (internal standard) were used. Injection volume was 80 µL.

Notes
Measurement of oxytocin in commercial preparations by LCUV (F2) and bioassay (chicken blood pressure) produced nearly identical results.

The determination of oxytocin presented in this report can be duplicated using the BAS 400 Liquid Chromatograph.



OXYTOCIN

Figure 1. Structure of Oxytocin.

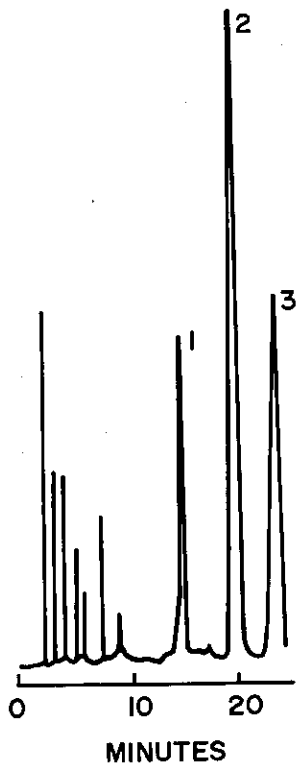


Figure 2. Chromatogram of (1) oxytocin, (2) chlorobutanol preservative, and (3) ethyl p-hydrobenzoate.