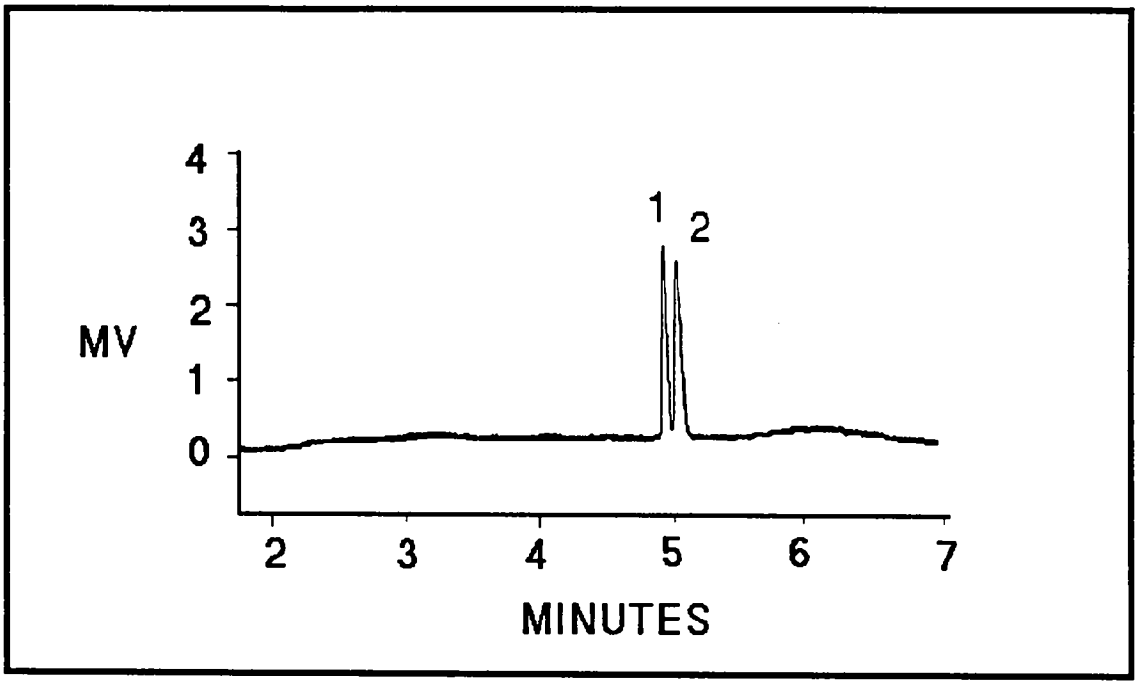
PHARMACEUTICAL *Application Briefs*

930797

Rx Prescription for success

Rx 017 8/90

CHIRAL SEPARATION OF EPHEDRINE BY CAPILLARY ELECTROPHORESIS



CONDITIONS ON WATERS QUANTA™ 4000

MODE:	FZCE
BUFFER:	25 mM Tris-H_3PO_4 pH = 2.5 15 mM Heptakis(2,6-di-O-methyl)-ß-Cyclodextrin
MODIFIER:	20 % MEOH
CAPILLARY:	35 cmx 50 µm i.d.
VOLTAGE:	+ 18 KV
DETECTOR:	UV @ 214 nm
INJECTION:	5 sec x 10 cm Hydrostatic

PEAK IDENTIFICATION:

1. Ephedrine (-)
2. Ephedrine (+)

SAMPLE MATRIX: **Standard Solution @ 0.1 mg/ml**

REFERENCE:
Michael Swartz, Pharmaceutical Laboratory, Waters Chromatography Division

Author: Peter Rahn

INTERESTING FACTS

1. Chiral Separations are a critical concern for the pharmaceutical chemist. Capillary electrophoresis represents a new technique available for these chemists.

2. CE offers high efficiency separations with a very short analysis time. Ephedrine chiral separations by HPLC require either a special chiral stationary phase (CSP) or derivatization. Capillary electrophoresis provides direct analysis of the enantiomers without derivatization.

3. For this separation the capillary length was decreased to 35 cm to reduce the analysis time from 12 minutes to 5 minutes. The resolution of this separation was not affected by reducing the capillary length.

4. The excellent signal to baseline noise level noted in this electropherogram is typical of the Quanta 4000's performance using the discretely variable UV/VIS detector.

5. Other chiral separations performed on the Quanta 4000 are presented in Rx 017 8/90 through Rx 022 8/90.

6. The electrolyte is prepared by adding 15 mM Heptakis(2,6-Di-O-methyl)-ß-Cyclodextrin to 25 mM Tris which has been adjusted to pH = 2.5 with phosphoric acid. After filtering the buffer, 20% MeOH is added. The derivatized ß-cyclodextrin, which is more soluble than underivatized ß-cyclodextrin is available from Sigma Chemical, P.N. H 0513.