

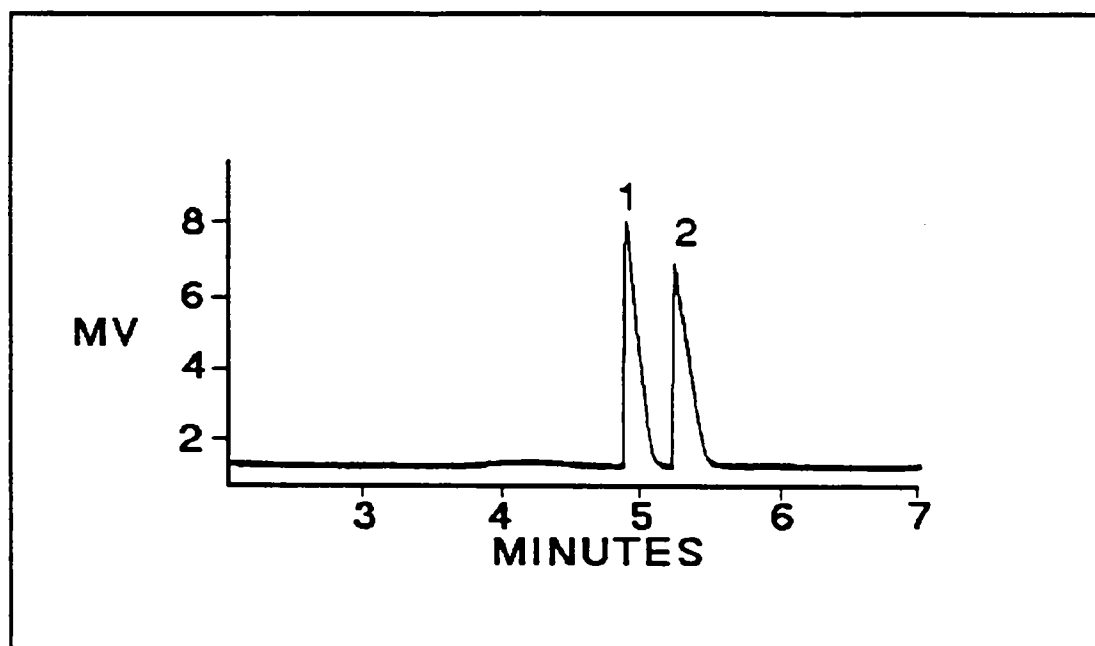


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**R** Prescription for success

Rx 018 8/90

### CAPILLARY ELECTROPHORESIS SEPARATION OF PSEUDOEPHEDRINE ENANTIOMERS



#### CONDITIONS ON WATERS QUANTA™ 4000

MODE: FZCE  
BUFFER: 25 mM TRIS - H<sub>3</sub>PO<sub>4</sub>  
pH = 2.5  
15 mM Heptakis(2,6-di-O-methyl)- $\beta$ -Cyclodextrin  
MODIFIER: 20 % MEOH  
CAPILLARY: 35 cm X 50  $\mu$ m i.d.  
VOLTAGE: + 18 KV  
DETECTOR: UV @ 214 nm  
INJECTION: 10 sec x 10 cm Hydrostatic

#### PEAK IDENTIFICATION:

1. Pseudoephedrine (-)
2. Pseudoephedrine (+)

SAMPLE MATRIX: Standard Solution  
@ 0.5 mg/ml

REFERENCE:  
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Chromatography Division

## INTERESTING FACTS

1. Capillary electrophoresis represents a new technique available for chemists to achieve chiral separations with minimal sample preparation. This separation is achieved by the judicious choice of buffers, pH, organic modifier and the chiral discriminator- a derivatized cyclodextrin.
2. CE offers high efficiency separations with a very short analysis time. HPLC chiral separations require either a special chiral stationary phase (CSP) or derivatization to form diastereomers. The CE separation eliminates both specialized stationary phases and 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 separation efficiency 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)- $\beta$ -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  $\beta$ -cyclodextrin, which is more soluble than underivatized  $\beta$ -cyclodextrin is available from Sigma Chemical, P.N. H 0513.