

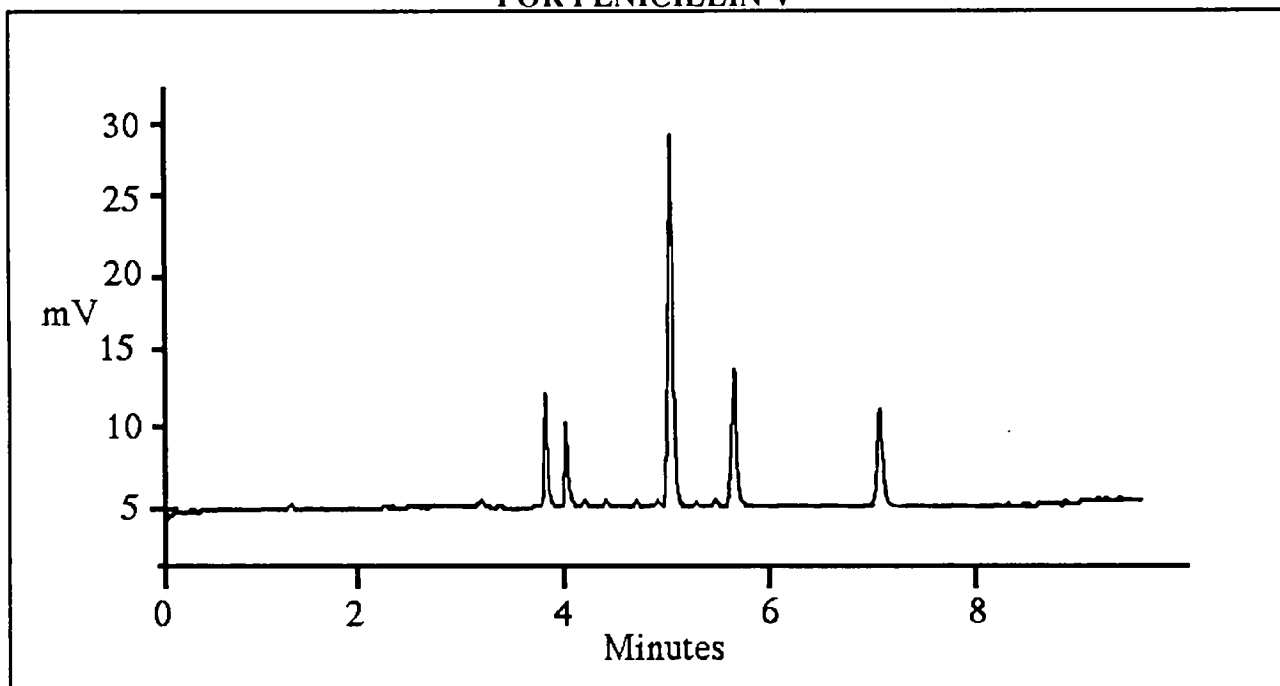


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R Prescription for success

Rx 031 12/90

CAPILLARY ELECTROPHORESIS STABILITY INDICATING ASSAY FOR PENICILLIN V



CONDITIONS ON WATERS QUANTA™ 4000

MODE: MECC
BUFFER: 20 mM $\text{Na}_2\text{B}_4\text{O}_7$,
20 mM Na_2HPO_4 ,
pH = 9.0
MODIFIER: 50 mM SDS
CAPILLARY: 75 μm x 60 cm
VOLTAGE: + 25 KV
DETECTOR: 214 nm
INJECTION: 4 sec Hystrostatic

SAMPLE MATRIX: Penicillin V solution
intentionally degraded

REFERENCE:
Michael Swartz, Pharmaceutical Laboratory, Waters
Chromatography Division

Author: Peter Rahn

INTERESTING FACTS

1. The Quanta 4000 easily detects impurities at very low concentrations. Only the large linear dynamic range of the UV detector, and the extremely quiet baseline of the Quanta 4000 provides good quantitation of these small impurities. The impurity level could easily be quantitated below 1 %.
2. CE provides an alternative technology to HPLC, GC or TLC to verify purity.
3. Performing separations above pH 8 minimizes tailing and is beneficial for many antibiotic separations.
4. Capillary Electrophoresis provides fast, rapid separations with high resolving power. In this example, the Quanta 4000 has been used to examine the antibiotics purity after intentional degradation.
5. Rapid high resolution analysis is possible with capillary electrophoresis. Five major impurities were separated in less than 8 minutes. Six other impurities were also resolved and detected at or below the 1 % level.
6. Like HPLC, CE methods are stability indicating. Penicillin V was intentionally degraded and subsequently the degraded products were easily separated by CE.