Waters Application Notebook

Drug Analysis Using Direct Serum Injection and Scanning Fluorescence Detection

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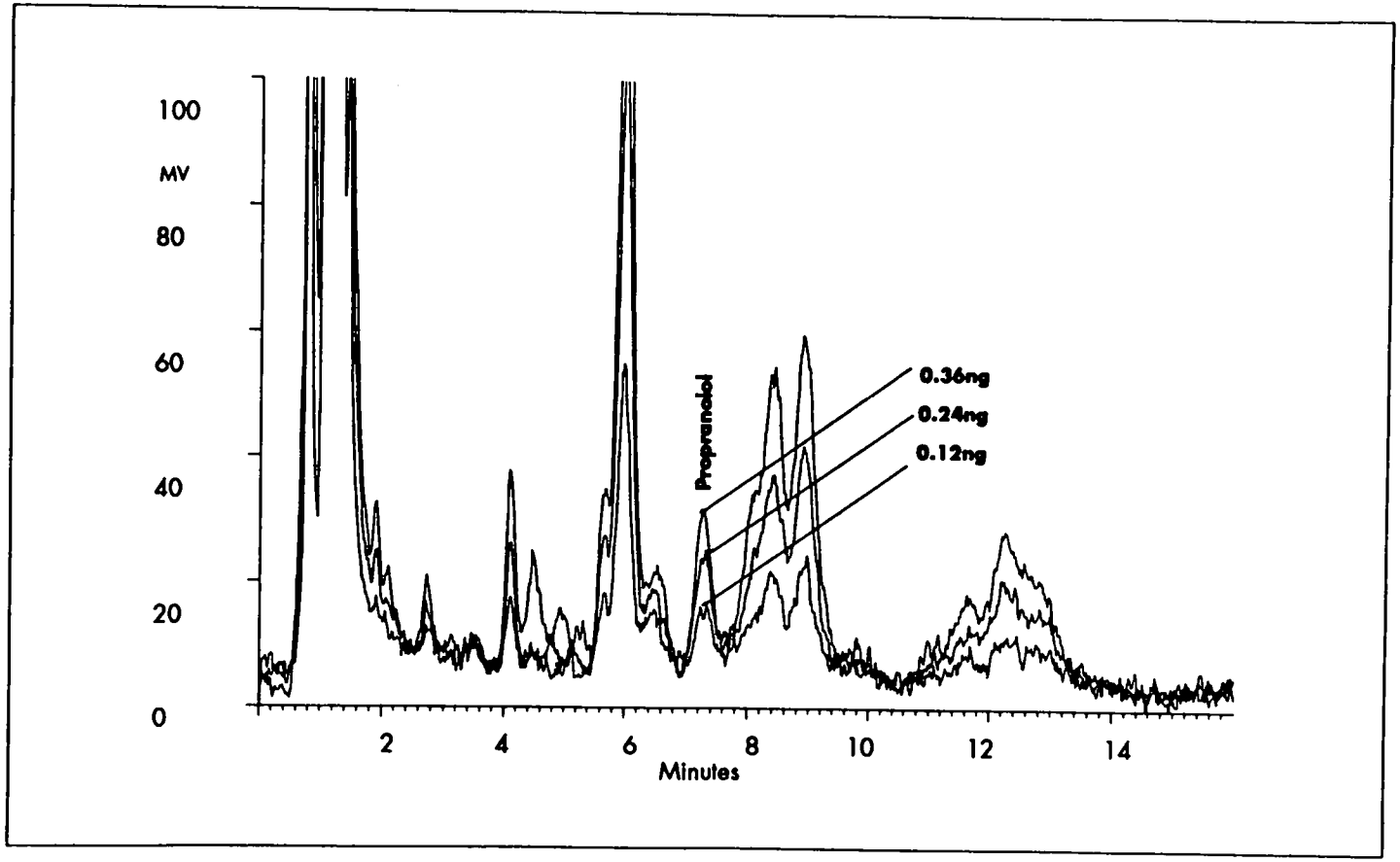

Conditions

Column: μBondapak™ C_{18} (3.9 x 300 mm)

Eluent: 25 mM SDS in water, pH 3.0 with phosphoric acid/ Isopropyl alcohol/Acetonitrile (60:20:20)

Flow Rate: 1.0 ml/min.

Column Temp: 40°C

Injection Volume: 20 μl

Sample: Reconstituted, lyophilized serum (spiked with Propranolol).

Detection Excitation: 230 nm

Using the scanning capability of the 470 Fluorescence detector, it was possible to determine the best excitation and emission wavelengths to identify and quantitate propranolol in serum at three times lower than the therapeutic levels without sample extraction.

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Objective:

The use of fluorescence detection in drug analysis aids in the identification and quantitation of beta blockers, such as propranolol, at high sensitivity in serum. The ability of scanning both excitation and emission (using the dual monochromator design) with the 470 detector allows you to select wavelengths that provide chromatographic specificity to isolate propranolol from other co-eluting compounds.

Details:

Sample Prep: Spiked, reconstituted with Milli-Q water, lyophilized serum was filtered using a 0.45 micron filter before injecting.

System:

The System used consisted of a 600E Multi Solvent Delivery System, 715 WISP and a 470 Scanning Fluorescence Detector. Data was collected using an 860 ExpertEase Data System (software version 2.3) over a SAT/IN.

References:

M. Arunyanart and L. J. Cline Love , Journal of Chromatography, 342 (1985) pages 293-301.