CAPSULES notes and applications from BASi
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Determination of Salsolinol by Microbore LCEC

Purpose

Develop a sensitive LCEC method for the determination of salsolinol (SAL) (**F1**) at a low concentration.

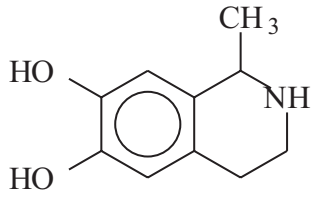

Figure 1. Structure of SAL

SAL was found to occur in human brain (1), and to be a precursor of 6, 7-dihydroxy-1, 2,-dimethyl-1, 2, 3, 4,-tetrahydroisoquinol (N-methyl-salsolinol), an endogenous neurotoxin (2). Therefore, a simple and reliable analytical method for the determination of SAL is necessary for studying the pharmacological effects of SAL.

Existing Methods

Various analytical methods are available for the determination of SAL, such as, LCEC (3, 4) and GC-MS (5, 6). However, we needed to develop an LCEC method with a low detection limit. The following microbore LCEC method is relatively simple, rapid, and highly sensitive.

LCEC Conditions

System: BAS 480e system equipped with an epsilon EC detector
Electrode: glassy carbon (3 mm)
Potential: +700 mV vs. Ag/AgCl
Column: UniJet, ODS, 3µm, 100 x 1 mm (BAS, P/N MF-8949)
Mobile Phase: 1L of buffer (0.1M monochloroacetic acid, 0.05 mM EDTA, 0.65 mM octylsulfate, sodium salt) , pH to 3.1; 50 mL Methanol.
Flow Rate: 100 µL/min
Amount Injected: 10 µL
Temperature: 35°C

Note

A representative chromatogram of SAL standard is shown in **F2**.

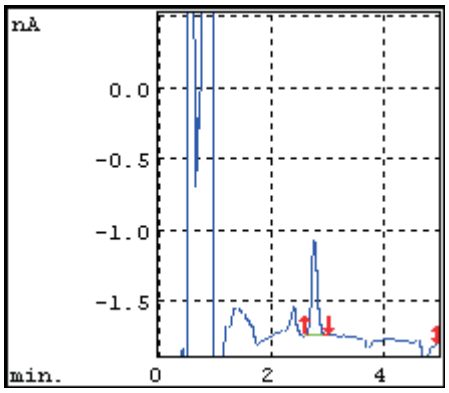

Figure 2. Typical chromatogram of 10 pg SAL

The calibration curves of SAL at the ranges of 0-200 pg and 0-1000 pg are presented in **F3a** and **F3b**, respectively. The detection limit is 2 pg on column.

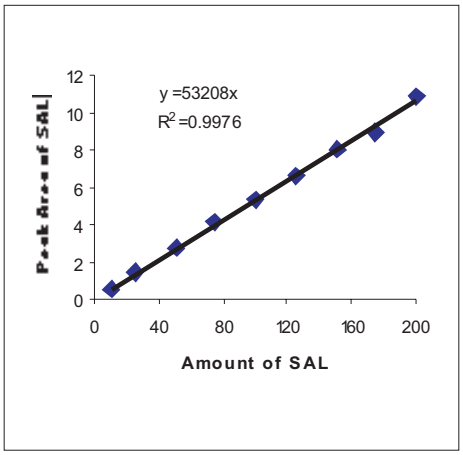

Figure 3a. Calibration curve of SAL (0 - 200pg)

(continued)

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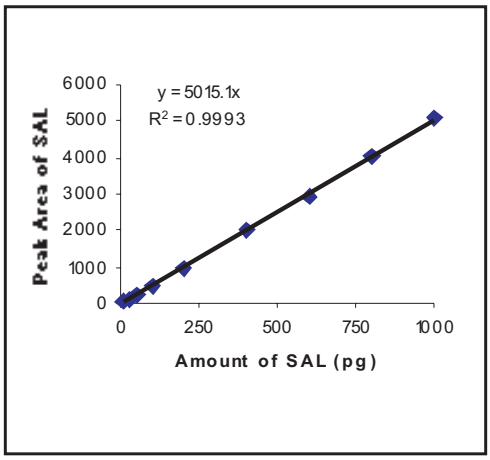

Figure 3b. Calibration Curve of SAL (0 - 1000pg)