

# CAPSULES

preliminary notes and applications from Bioanalytical Systems, Inc.

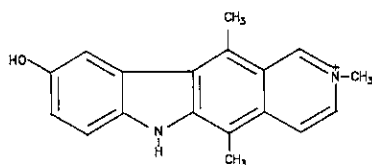
## Detection of *N*<sub>2</sub>-methyl-9-hydroxy-ellipticinium Acetate in Plasma

### Purpose

Detection of the antitumor alkaloid *N*<sub>2</sub>-methyl-9-hydroxyellipticinium acetate (9-OH-NME) in plasma.

### Existing Methods

Reverse-phase LC utilizing UV or fluorescence detection. The former detector results in poor detection limits and the latter requires extraction plus derivatization.



### Reference

Use of Electrochemical Detection in the HPLC Determination of Hydroxylated Ellipticine Derivatives, P. Bellon, P. Canal, J. Bernadon, and G. Soula, J. Chromatogr. 309(1984) 170-176.

### Conditions

Detector: BAS LC-4

Electrode: Glassy carbon

Potential: +0.6 V vs. Ag/AgCl

Column: 10  $\mu$ m C-18 reverse-phase (300 x 3.9 mm)

Mobile Phase: Methanol: water (60:40), 200 mmoles/L ammonium acetate, pH 6.0.

Detection Limit: 250 pg in a 10  $\mu$ L injection. This corresponds to a concentration of 25 ng/mL

Linear Range: 30 ng/mL to 1  $\mu$ g/mL

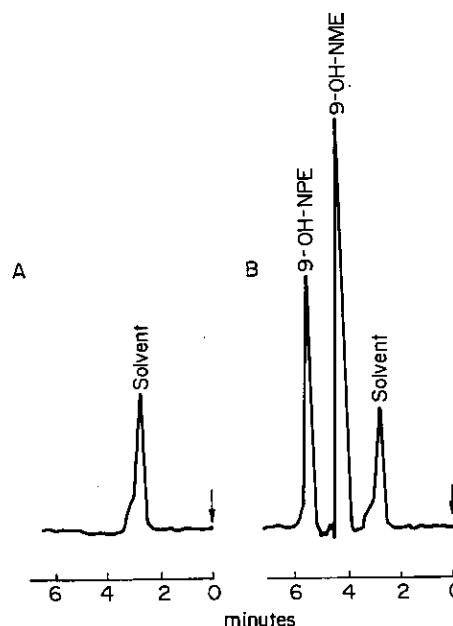
### Sample Preparation

200  $\mu$ L plasma samples, with *N*<sub>2</sub>-propyl-9-hydroxyellipticinium acetate (9-OH-NPE) as internal standard, were extracted 3 X with ethyl acetate after addition of sodium tetraphenylborate as counter-ion. The organic phases were combined, evaporated, and reconstituted in mobile phase.

### Clinical Application

Monitoring plasma levels of 9-OH-NME. A patient suffering from metastatic breast carcinoma was administered 9-OH-NME and blood levels were monitored over a 7-hour period.

This method could potentially be used to monitor all ellipticine derivatives bearing a preserved phenolic function (i.e., glutathione and cysteine adducts recently observed in human and animal urine and bile).



Electrochemical detection of the antitumour alkaloid *N*<sub>2</sub>-methyl-9-hydroxyellipticinium acetate (9-OH-NME) in plasma.

**Figure 1.** Chromatogram of A) a blank plasma extract, B) an extract of plasma from a patient 1 hour after administration of 9-OH-NME. Redrawn from above reference.

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