In Vivo Microdialysis Rat Brain - Purines

Purpose

To determine free purines in the brain of freely-moving rats.

Conditions

System: BAS-400 Purine Analyzer with Microdialysis System II
Detector: BAS UV-8, 254 nm
Column: Biophase Octyl, 5 µm, 250 x 4.6 mm (BAS, PN MF-6032)
Temperature: Ambient
Mobile Phase: 10 mM NaH_2PO_4 (pH 4.5) plus 9% CH_3OH
Flow Rate: 1.2 mL/min
Detection Limit: 0.1, 0.2, 0.3, 0.4, and 0.6 ng, respectively, of hypoxanthine, inosine, guanosine, adenine, and adenosine at a S/N of 3.
Microdialysis Probe: CMA/10, 3 mm membrane
Perfusion Speed: 2 µL/min using CMA/100 Microinjection Pump
Containment System: CMA/120 for awake rats

Sample Preparation

Stereotaxically implant a guide cannula into the rat caudate and cement it to the skull(1). Allow the rat to recover from surgery for several (2-3) days. The microdialysis probe is inserted while the rat is awake. Continuously perfuse Ringer's solution into the probe and collect dialysates in the CMA/140 fraction collector. Directly inject 5 µL of each fraction into the Purine Analyzer.

Notes

Chromatograms of purine standards and rat brain dialysates are presented in F1.

The determination of purines presented in this report can be duplicated on the BAS 200 Problem Solver.

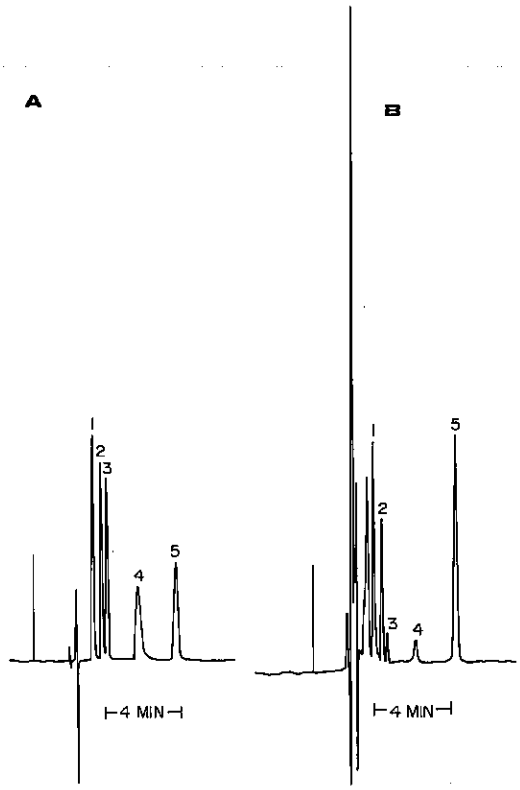

Figure 1. Chromatogram of (A) 1 µM purine standards, 10 µL was injected, AUfs 0.02 (B) awake rat brain dialysates, 5 µL was injected, AUfs 0.005 Peaks: 1. hypoxanthine 2. inosine 3. guanosine 4. adenine 5. adenosine

The information in this publication is supplied as a service to our customers.

Reference

1. Carnegie Medicin, Microdialysis User's Guide, 4th Edition, Stockholm, Sweden, 1988.