

Biogenic Amines/Catecholamines

Brain tissue levels of catecholamines and indoleamines reflect the functional state of central nervous system ascending neural pathways. HPLC analysis of these aminergic neurotransmitters and their metabolites are best conducted using ion-pair reversed-phase separations, combined with electrochemical detection. The separation shown, illustrates the rapid analysis of these neurochemicals in mouse brain homogenates using a smaller particle, highly stable, column-packing material (Agilent ZORBAX SB-C8, 3.5 µm).

 DOPA - dihydroxyphenylalanine
 HIAA - hydroxyindoleacetic acid

 DHBA - dihydroxybenzylamine
 EP - epinephrine

 DOPAC - dihydroxyphenylacetic acid
 HVA - homovanillic acid

 NE - norepinephrine
 5HT - hydroxytryptamine

 DA - dopamine
 3MT - methoxytyrosine



Conditions: LC: HP1090 Column: ZORBAX SB-C8 Rapid Resolution, 4.6 x 75 mm (3.5µm) Agilent P/N: 866953-906 Mobile Phase: 0.14 M sodium acetate / 20 mM EDTA / 0.75 mM octyl sulfonate / 9% methanol, pH 3.5

Electrochemical Detect: HP1049A, 0.75V vs Ag/AgCl; Flow: 1.5 mL / min.; 26°C; Inj. Vol: 20µL (2 µg tissue samples)





Highlights

- Rapid and selective analysis of neurochemicals in tissue homogenates are completed in less than 10 minutes per sample, using highly efficient columns.
- Samples are directly injected as perchloric acid (0.1N) extracts. - No sample workup. (For tissue prep, see ¹).
- Highly-Stable Agilent ZORBAX SB-C8 columns exhibit unmatched column lifetime, allowing thousands of samples per column.

¹Cytomegalovirus Infection of the Developing Brain Alters Monoamine Metabolism. O'Kusky, J.R., Boyes, B.E., Walker, D.G., and McGeer, E.G. (1991) Brain Research <u>559</u>, 322-330.

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