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Rapid, High Sensitivity Analysis of Plasma Catecholamines

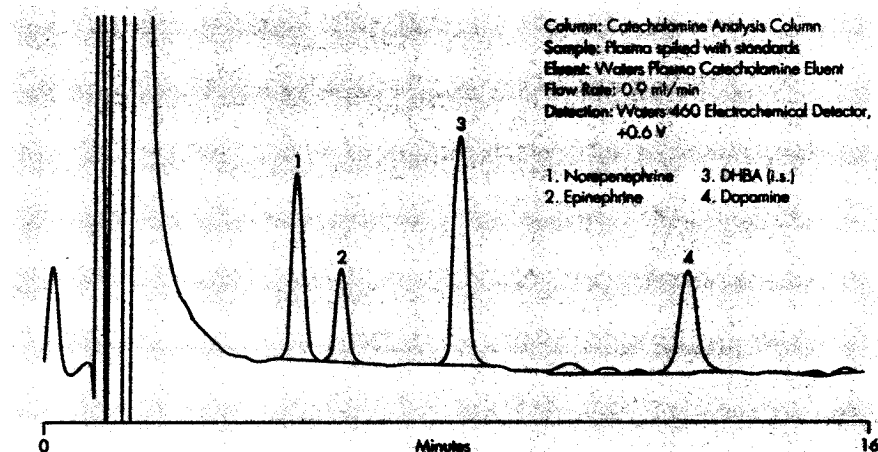
Method of choice - HPLC/ECD.

Plasma catecholamine analyses play a crucial role in diagnostic medicine, particularly for the differentiation of hypertension due to pheochromocytoma. To be useful, the analysis method must be capable of detection and quantitation of multiple catecholamines and their metabolites at picogram levels in a complex, multi-component mixture. The analysis method of choice for plasma catecholamines is HPLC with electrochemical detection (ECD). HPLC separations allow simultaneous measurement of multiple monoamines in a single high speed analysis. The required picogram sensitivity is achieved through use of ultra high sensitivity electrochemical detection.

HPLC versatility expands system applicability.

Waters standard catecholamine method measures epinephrine, norepinephrine, and dopamine in less than 15 minutes for high sample throughput (Figure 1). Sample preparation is based on a modification of the widely used alumina extraction method that insures reliability and reproducibility. The flexibility of Waters Catecholamine Analysis System also allows you to conduct analyses of plasma, urine, cerebral spinal fluid, or tissue samples on the same instrument using Waters methods or your own preferred methods.

Figure 1: Analysis of Catecholamines in Plasma.



Plasma containing 200 pg/ml of epinephrine, 330 pg/ml of norepinephrine, and 200 pg/ml of dopamine giving on column levels of 30, 50 and 30 pg respectively, is assayed in less than 15 minutes with high sensitivity well above the detection limits of the electrochemical detector. Internal standard is 3,4-dihydroxybenzylamine (DHBA). Analysis data was collected on a Waters 860 Networking Computer System.

Method and instrument integration assure results.

Waters has taken the analysis of plasma catecholamines by HPLC/ECD one step further. The Waters Catecholamine Analysis System integrates an optimized instrument configuration with thoroughly tested methodologies to assure routine analyses with low picogram sensitivity. The system includes

Waters 460 Electrochemical Detector which utilizes an amperometric design to provide the highest sensitivity and superior stability. To insure your successful start-up, Waters has developed a Plasma Catecholamine Starter Kit and detailed Method Manual to provide all the reagents and expertise required to analyze plasma catecholamines in your own laboratory.

Ordering Information

	Part No.
Waters Catecholamine Analysis System includes Waters 590 Programmable Solvent Delivery System, 712 WISP™ Autosampler, 460 Electrochemical Detector, 746 Data Module, and Plasma Catecholamine Starter Kit.	98670
Waters Manual Catecholamine Analysis System includes U6K Variable Volume Injector in place of 712 WISP Autosampler.	98671
Waters Plasma Catecholamine Starter Kit includes Catecholamine Analysis Column, 460 ECD Working Electrode, 2 liters Eluent, sample preparation reagents, and method manual.	40520

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