

## 21 key Amino Acids and Catecholamines

Determination of 21 key Amino Acids and Catecholamines by Capillary Electrophoresis and Laser Induced Fluorescence Detection.

### Introduction:

This application note describes a method to simultaneously detect and quantify several Amino acids and catecholamines in a single injection. The method, developed by Picometrics, couples capillary electrophoresis separation with LIF detection to provide the analyst with a selective and sensitive tool for the analysis of biological samples.

### Getting the maximum amount of data from your samples

Since the quantification method requires less than 1  $\mu\text{L}$  of sample, a number of additional tests can be performed on the same sample to provide other analytical data with complementary methods.

An additional possible benefit of the smaller sample requirement is that it opens the way to greater temporal resolution in biological kinetic studies.

### A robust method

There are two steps in the method, derivatization with NDA and the separation, which takes less than 15 minutes.

### Instruments:

Capillary Electrophoresis: Agilent 3D CE  
Detector: Picometrics ZETALIF *evolution* detector  
Laser: Diode laser, 410 nm, 10 mW

### Sample:

Standards in solution in Ringer medium

### Reagents:

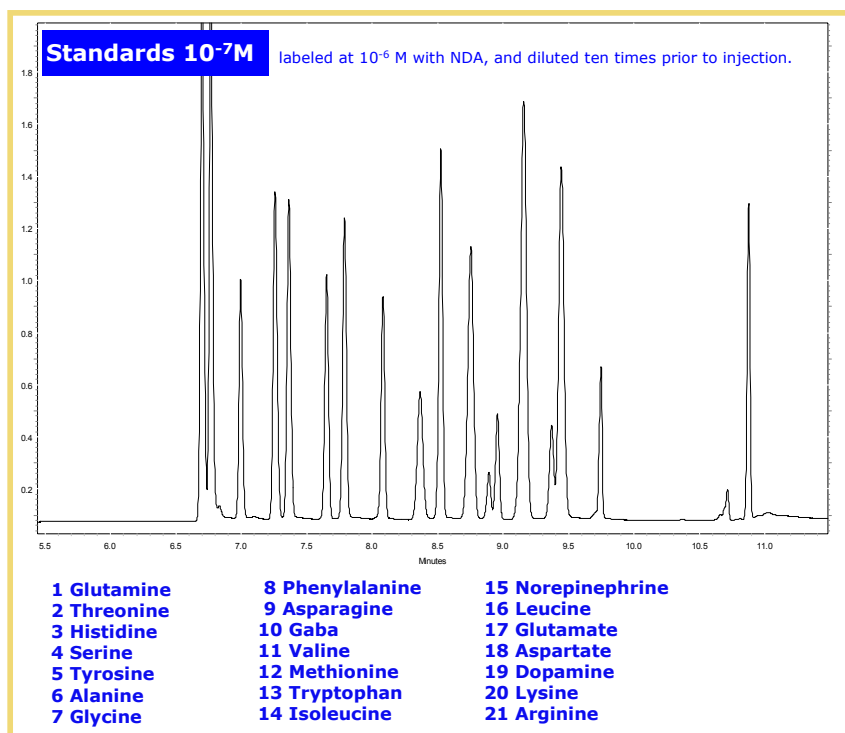
Derivatization agent: Naphthalene Dicarboxaldehyde (NDA)

### Methods:

Capillary: 50  $\mu\text{m}$  ID, 65 cm length (50 cm eff. length)  
Buffer: 7.5 mM Lithium tetraborate, 20 mM LIDS, pH=9.2  
Voltage: 20 kV  
Injection: 10 seconds at 50 mbar, i.e. 14.8 nL injected  
Working temp.: 25°C

**Limit of Detection\*:**  
*nanoMolar LOD or lower*

\* Estimated for a S/N of 3



Source: Picometrics application lab. 08/2004.