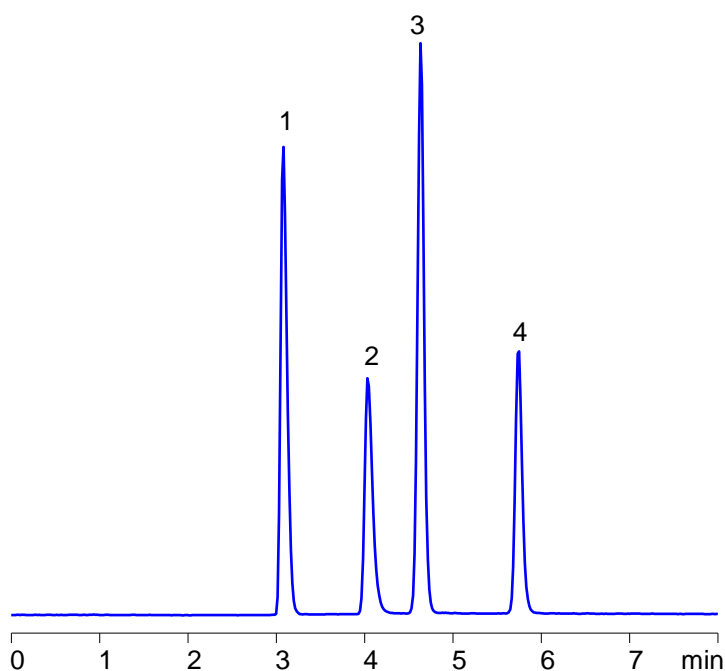
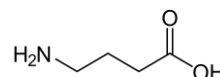


## HPLC Analysis of Compounds in Glutamate Cycle with LC-MS Conditions on Amaze MH Tri-Modal HILIC Column

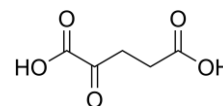


**Column:** Amaze MH (Metabolites HILIC)  
**Dimensions:** 3.0x100 mm, 3  $\mu$ m, 100A  
**Mobile phase:** ACN/Water/AmFm/Formic acid  
**Detection:** ELSD, 45°C

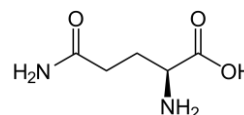
### 1. $\gamma$ -Aminobutyric acid (GABA)



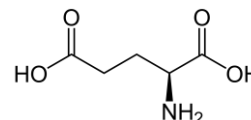
### 2. $\alpha$ -Ketoglutaric acid



### 3. Glutamine



### 4. Glutamic acid



## Application Notes

This application note is one of the studies devoted to the analysis of the analysis of compounds in various metabolomic pathways.

The glutamine-glutamate metabolic pathway is crucial for various physiological processes, including protein synthesis, energy production, and ammonia detoxification. This application note introduces an innovative approach to the analysis of the very polar compounds in glutamine-glutamate pathway using a HILIC/cation- and anion-exchange mixed-mode column. The method was developed to enhance the separation efficiency, sensitivity, and specificity for both glutamine and glutamate, alongside other pathway intermediates. The **Amaze MH** tri-modal column, integrating hydrophilic, cation- and anion-exchange properties ion exchange, facilitated comprehensive profiling of the pathway's components. This method showcases the HILIC tri-modal column's potential in complex metabolomic analyses. [Contact us](#) if you need help with any HPLC method development. We are highly efficient and affordable