



Improved peak shape of α -ketoglutaric acid analyzed by HPLC- AppNote

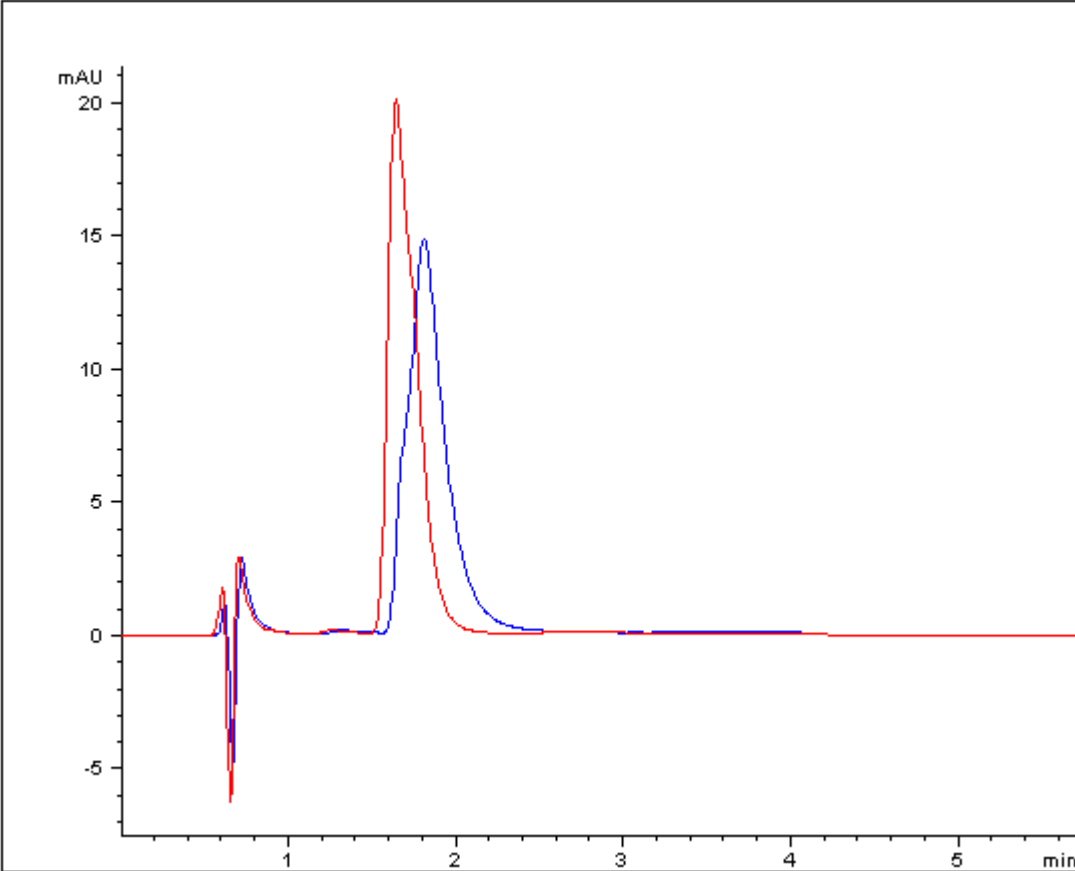
Separation of a key component in the Krebs Cycle with improved peak shape using a metal free coated stainless-steel column

As α -ketoglutarate is one of the most important nitrogen transporters in metabolic pathways, it is of particular value to quantify all metabolic analytes and maintain data integrity. This compound interacts with stainless steel and is known to have substandard peak shapes in HPLC.

This data below highlights important chromatographic performance improvements between a hydrophobic, metal free coated stainless steel HPLC column and an untreated stainless-steel column with the same packing material and method conditions on the same instrument. Metal free surface treatments are available on all Cogent HPLC columns.

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HPLC Columns and Chromatography Accessories





Peak:

α -Ketoglutaric acid

Trace	Hardware	Width (<i>Minutes</i>)	Plates (N)
Red	Metal Free Coated	0.1833	436
Blue	Stainless Steel	0.2533	279

Method Conditions:

Column: Cogent Diamond Hydride™, 4 μ m, 100Å

Catalog No.: 70000-10D-2
70000-10P-2

Dimensions of both columns: 2.1mm x 100mm

Mobile Phase:

A: DI / 10mM ammonium formate (0.5% formic acid)



B: 95/5 acetonitrile / 10mM ammonium formate

Injection vol.: 2 μ L

Flow rate: 0.3mL / minute

Detection: 254nm

Sample Preparation: α -ketoglutarate 1mg / mL in DI water

Note: α -ketoglutaric acid is one of two ketone derivatives of glutaric acid. The term "ketoglutaric acid," when not further qualified, almost always refers to the alpha variant. β -ketoglutaric acid varies only by the position of the Ketone functional group and is much less common.