

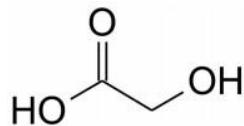
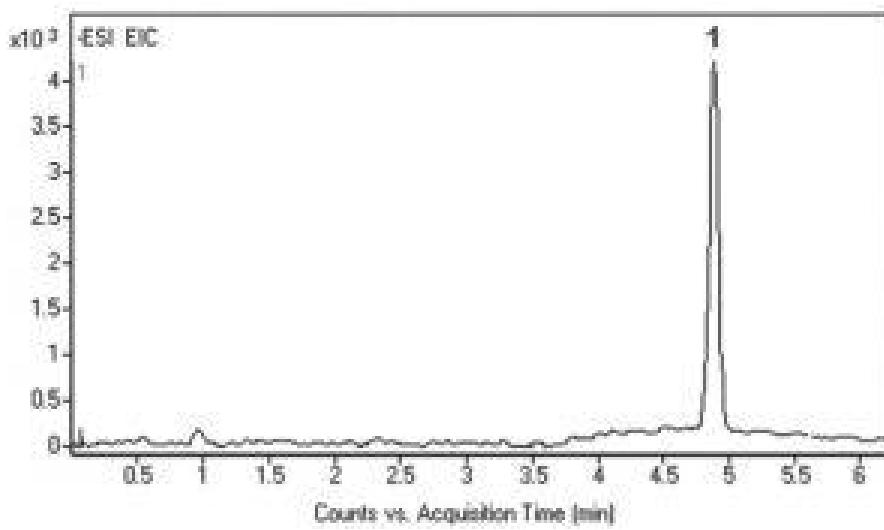


Glycolic Acid Analyzed by HPLC - AppNote

Analysis in Urine Samples

An enzymatic Method is widely used for the determinations of Glycolic Acid in various products, but it suffers from instability and very high cost of the enzyme (Glycolate Oxidase). The LCMS analysis presented here is rapid, simple, selective, and suitable for routine analyses of urine samples.

It offers numerous advantages including ease of sample preparation, low cost, rapidity, and excellent repeatability (*precision was better than 1.0% - %RSD below 0.5 for n=3*). The calibration curve was linear in the 0.080–0.30 mg / mL (GA). The correlation coefficients of linear regression analysis were with the range 0.9974–0.9997. Recoveries of the GA from urine samples were between 94.9 and 100.5%.



Peak:

Glycolic Acid 75.0088 [M-H]⁻ m/z in urine sample

Method Conditions

Column: Cogent Diamond Hydride™, 4μm, 100Å

Catalog No.: [70000-15P-2](#)

Dimensions: 2.1 x 150mm

Mobile Phase:

A: DI Water / 10 mM Ammonium Formate

B: 95% Acetonitrile / 5% DI Water / 10 mM Ammonium Formate (v/v)

Gradient:

Time (minutes)	%B
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0	95
1	95
5	30
7	30
8	95

Post Time: 3 minutes

Flow rate: 0.4mL / minute

Detection: ESI – NEG - Agilent 6210 MSD TOF Mass Spectrometer

Sample Preparation: Urine sample was spiked with stock solution of Glycolic Acid. The solution was filtered through a disposable 0.45µm Syringe Filter (MICROSOLV Tech Corp.). The sample for injection was diluted 1:100 with 50:50 Solvent A / Solvent B mixture for a final concentration of 0.1mg / mL.

t₀: 0.9 minutes

Note: Glycolic Acid is widely used in adhesives, metal cleaning, dairy cleaning, water-well cleaning, electroplating, dyeing, detergents and cosmetic products. It is also the most commonly used hydrophilic teeth whitening agent.



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