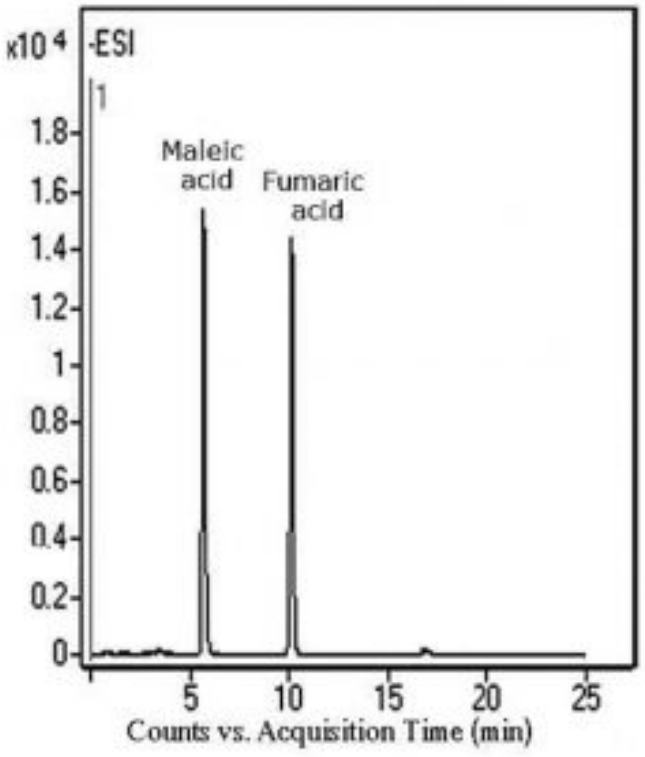
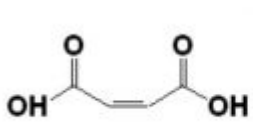
Maleic & Fumaric Isobaric Acids Analyzed with LCMS – AppNote

Separation & Detection of Isobaric Compounds

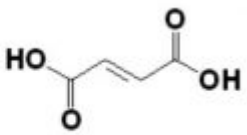
Two Isobaric Acids, Maleic and Fumaric (*115 m/z*) are separated when using the solvents below and a Gradient Method. Solvent A used in this application note contains 50% Methanol which is recommended when biological samples are used. This Method is reproducible and is fast to equilibrate between gradient runs with 0.08% RSD.

Maleic and Fumaric are simple acids and the Peak Shape is not affected by the presence of Sodium in the system as with more complex acids. *When analyzing complex compounds, it is recommended that as much Sodium be removed from the system as possible (i.e. replacing glass bottles with Teflon bottles) or the Mobile Phase should be prepared fresh daily.*





1. Maleic acid



2. Fumaric acid

Peaks:

1. Maleic Acid, 115 m/z (M-H)-
2. Fumaric Acid, 115 m/z (M-H)-

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Method Conditions

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

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150mm

Mobile Phase:

A: 50% Methanol / 50% DI Water / 0.05% Formic Acid (*Strong Solvent*)

B: 90% Acetonitrile/ 10% DI Water /10 mM Ammonium Acetate (*Weak Solvent*)

Gradient: Linear gradient over 10 minutes (*adjustable per instrument*)

Post Time: 5 minutes

Flow rate: 0.4mL / minute

Detection: ESI – neg – Agilent 6210 MSD TOF Mass Spectrometer

Injection vol.: 1µL

Sample Preparation: Sample stock Solutions were made in acidified DI Water at a concentration of 0.2mg / mL. Samples for analysis were made by diluting the stock 1:100 in 50:50 Solution A and B.

Note: *The gradient used for this application note was a simple linear gradient over 10 minutes. The exact conditions are not provided since they will have to be adjusted depending on individual instrument configuration. It is important to remember not to overload the Column or saturate the Detector (it is recommended to adjust the sample concentration so that injection is between 1 & 5µL).*

Attachment

No 116 Maleic & Fumaric Isobaric Acids Analyzed by LCMS pdf 0.2 Mb Download File

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