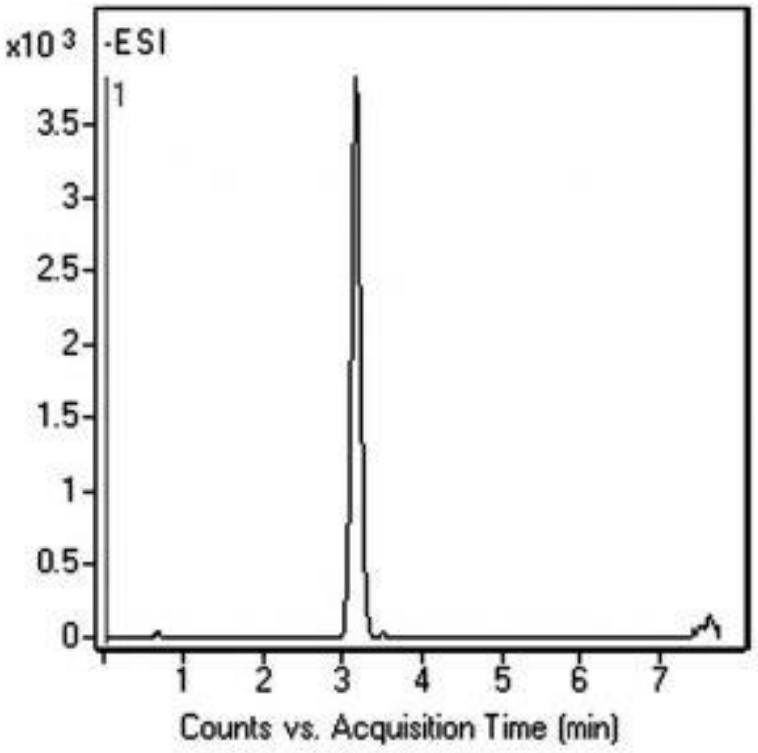
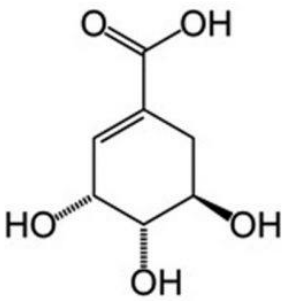
Shikimic Acid Analysis by LCMS- AppNote

Ingredient for Production of Oseltamivir

The method shown in this application note assures both high specificity and high sensitivity for Shikimic Acid, a synthetic ingredient for the production of the pharmaceutical Oseltamivir marketed as Tamiflu®.

Using this LCMS friendly method allows for a 10-100 fold increase in sensitivity over some other methods. Also note that very little time is needed for equilibration between gradient runs. One column volume is all that is required for peak precision.





Peak:

Shikimic Acid 173.0455 m/z (M-H)–

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å
Catalog No.: 70000-05P-2
Dimensions: 2.1 x 50mm
Mobile Phase:

A: 50% Methanol / 50% DI Water / 10 mM Ammonium Acetate
B: 90% Acetonitrile / 10% DI Water / 10 mM Ammonium Acetate

Gradient:

Time *(minutes)*	%B
0	95
5	50
8	50
10	95

Flow rate: 0.4 mL / minute
Detection: ESI – NEG - Agilent 6210 MSD TOF Mass Spectrometer
Injection vol.: 1µL
Sample Preparation:

Stock Solution: 0.1 mg/mL Shikimic Acid in Methanol diluent.
Working Solution: Stock was diluted using 50% Solvent A and 50% Solvent B mixture for the final concentration 1 mg / L. Before injection, solution was filtered using a 0.45µm Nylon Syringe Filter (MicroSolv Tech Corp.).

Note: *Shikimic Acid is a key ingredient in the production of Tamiflu, an antiviral drug for Influenza virus A and swine-origin Influenza (H1N1). Shikimic Acid can be found in the leaves and organs of many plants. This Carboxylic Acid is also an essential compound in metabolic pathways for aromatic Amino Acids and Alkaloids in plants. Moreover, Shikimic Acid comes from grape skin and is always present in wines. Determination of its concentration in wine can be used as a tool to differentiate between different red wine varieties.*

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Attachment

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