Analysis of Organic Acids with Ultisil OAA Column

What is organic acid?

Organic acids refer to organic compounds with acidic properties. The most common ones are associated with functional groups of carboxyl (-COOH), sulfonic group ($-SO_3H$), sulfinic group ($-SO_2H$), such as malic acid, tartaric acid, oxalic acid, formic acid, etc. Organic acids have wide applications in oil and gas well stimulation treatments, food preservation, nutrition, animal feed and biological system.

Reversed phase high performance liquid chromatography (HPLC) is the most widely used method for the separation and analysis of organic acids. Usually, acidic aqueous mobile phase is used to prevent the dissociation of organic acids and improve the retention in the hydrophobic column. This improves the separation efficiency for various organic acids. However, even under acidic conditions, the polarity of those organic acids with strong acid functional groups is still high and difficult to retain on C18 column. In addition, the high aqueous mobile phase can cause the phase collapse in conventional C18 column and thus deteriorate the separation performance and lifetime of the column.

Ultisil® OAA Characteristics

Ultisil® OAA is a silica based reversed phase HPLC column designed for high-efficient, high-throughput organic acids analysis. By using a unique bonding technology, the OAA dedicated columns are compatible with 100% aqueous mobile phase and deliver better performance and higher separation efficiency for organic acids than conventional C18 column does. As a favored HPLC column for the determination of small hydrophilic organic acids, C1 to C7 fatty acids, and hydrophilic aromatic acids, it meets the specific analytical requirements for the food and beverage products, pharmaceutical preparations, plating solution, manufacturing chemicals, chemical intermediates and environmental samples.

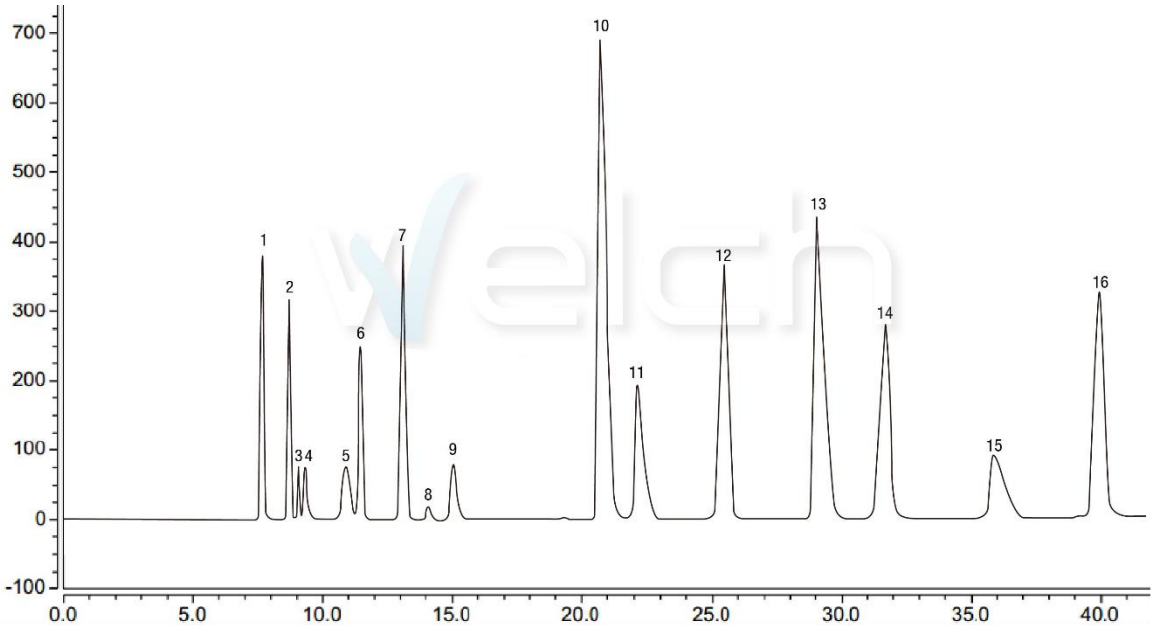
- Excellent separation capability of hydrophilic organic acids.
- Compatible with 100% aqueous mobile phase, good retention for polar compounds.
- Ideal selectivity for a variety of organic acids, with high separation efficiency and excellent peak shape.
- Each column is tested to ensure excellent hydrolysis stability for hydrophilic organic acids analysis.
- Excellent in separating hydroxyl fatty acids and aromatic organic acids, best choice for organic acids analysis in the pharmaceutical industry, food, and beverage detection industry.

Performance Qualification

Each column is tested to ensure the hydrolysis stability for organic acids analysis. Each column would be tested with 16 organic acids by following strict quality control procedures

to ensure the separation resolution and test reliability to meet customers' performance requirements.

1. Oxalic acid	5. Pyruvic acid	9. Acetic acid	13. Cis-aconitic acid
2. Tartaric acid	6. Malic Acid	10. maleic acid	14. Acrylic acid
3. Quinic acid	8. Lactic acid	11. Citric acid	15. Propionic acid
4. Methanoic acid	7. Ascorbic acid	12. Fumaric acid	16. Citraconic acid



HPLC column：Welch Ultisil® OAA，4.6×300mm
Mobile phase：A：0.01mol/L KH_2PO_4 solution
B：methanol, gradient elution
Temperature：32℃
Flow Rate：0.5 mL/min
Detector：UV 210nm
Injection Volume：5μL

For product inquiry or any other help, please send email to sales@auroraprosci.com

Keywords:

Organic acids, Pharmaceutical, food industry, HPLC, separation science