# What is HILIC mode?

## Hydrophilic Interaction Chromatography

It is a separation mode utilizing the interaction difference of hydrophilic properties between the compounds.

The elution order in the Hilic mode is in reverse order of reversed phase mode. That is to say from least polar to most polar.

In a reversed phase mode, the more high concentration of an organic, the lesser retentivity of compounds.

In a Hilic mode, the more high concentration of an organic, the lesser retentivity of compounds.

### Applications for HILIC mode

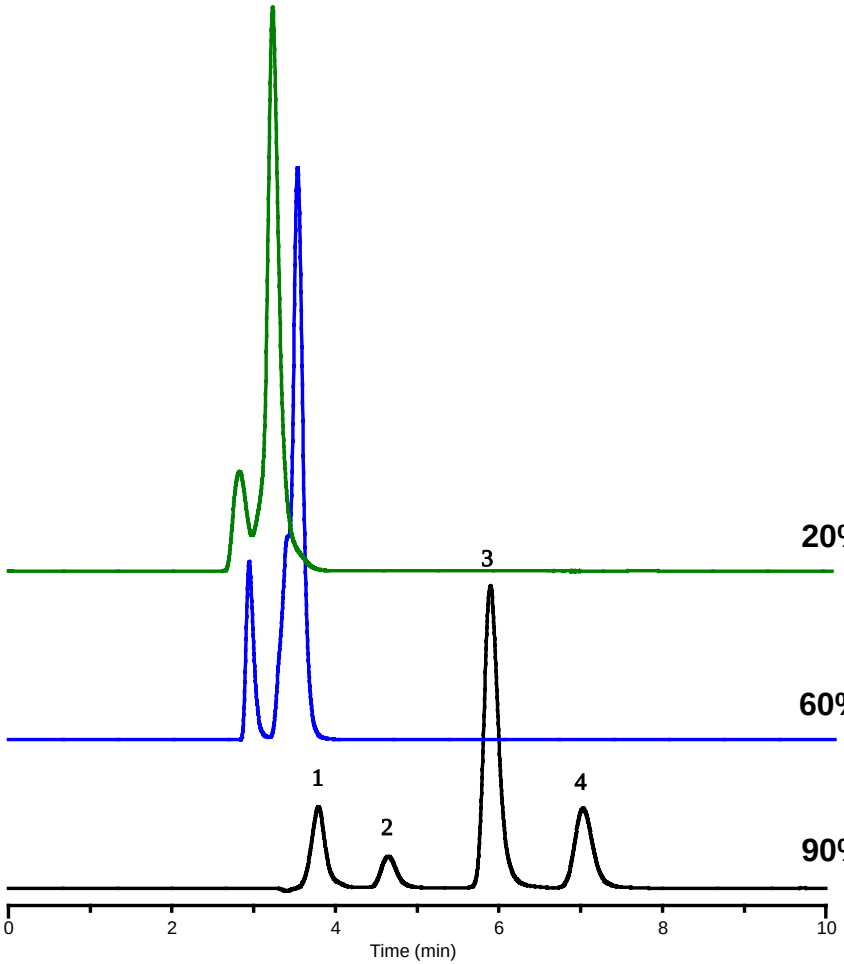
- Amino acids
- Water-soluble vitamins
- Drug metabolites

☆Separation for polar compounds

### Advantages of HILIC mode

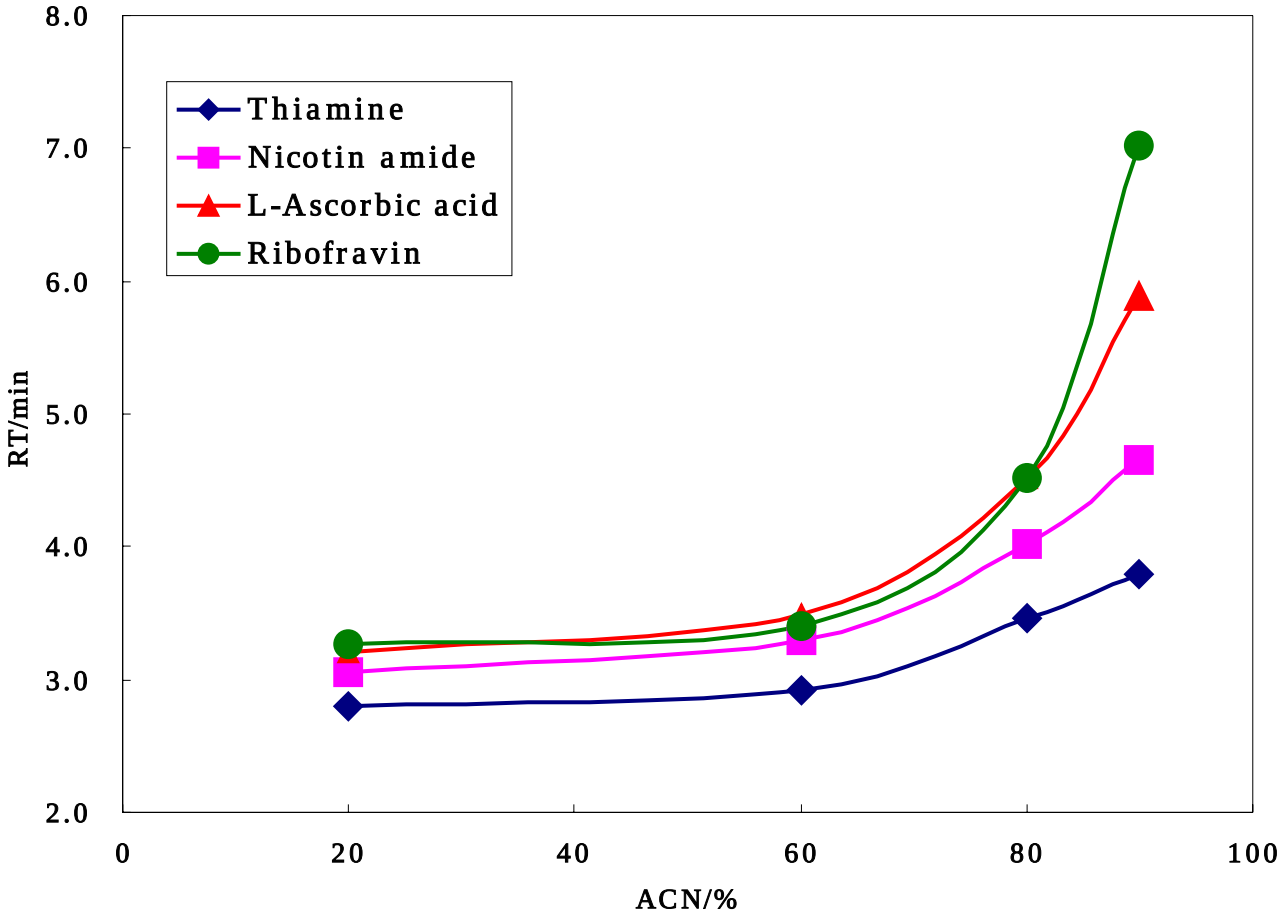
- Low column back pressure analyses can be performed due to high organic solvent composition.
- A high organic solvent concentration of the mobile phase will lead to a high sensitivity LC/MS analysis.
- A benefit of less ion suppression effect in LC/MS analyses.
- Precision determination for polar compounds owing to the fast elution of hydrophobic contents

# Retention behavior of HILIC mode

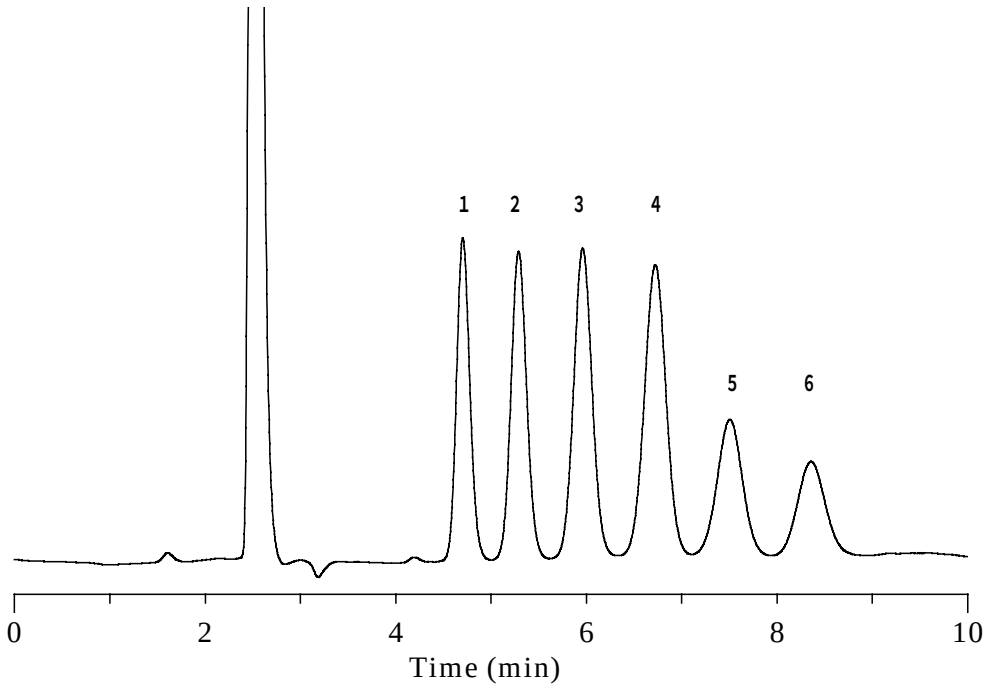



| | | |
|---|---|---|
| **Column :** | **Inertsil HILIC 5μm 250 x 3.0 mmI.D.** | |
| **Eluent :** | **0.1%TFA in ○○% $CH_3CN$** | |
| **Flow rate** | **: 0.4 mL/min** | |
| **Detector** | **: UV 254nm** | |
| **Col.temp.** | **: 40 ℃** | |
| **Sample :** | **1) Thiamine** | **8μg/mL** |
| | **2) Nicotinamide** | **8μg/mL** |
| | **3) L-Ascorbic Acid** | **80μg/mL** |
| | **4) Rivoflavin** | **8μg/mL** |

# Retention behavior of HILIC mode

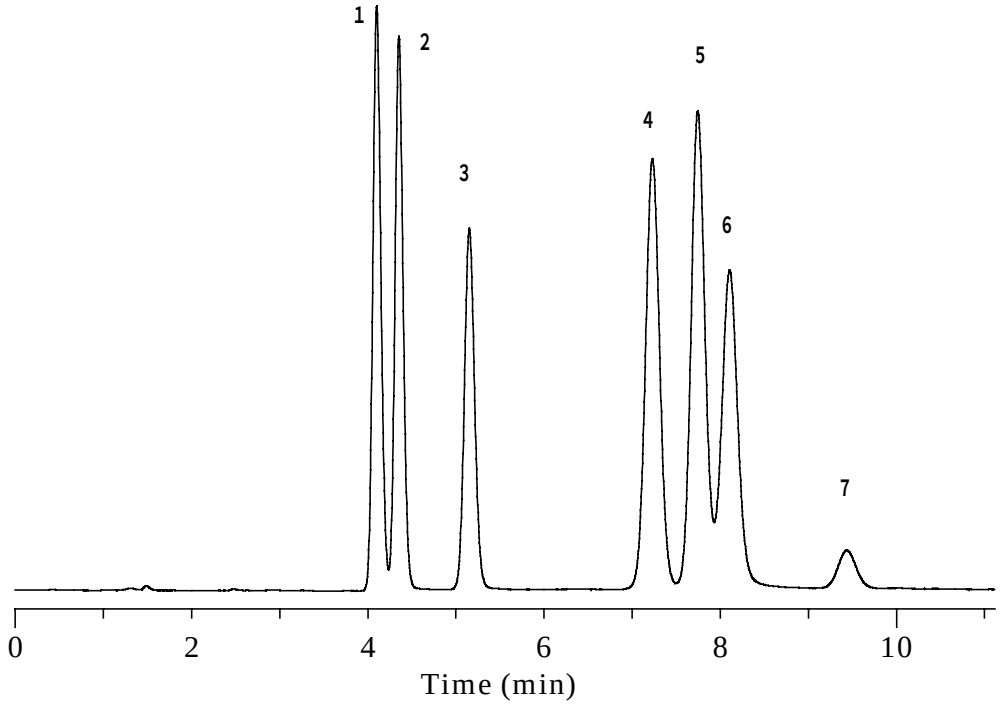


# Analysis of oligosaccharide using Inertsil HILIC



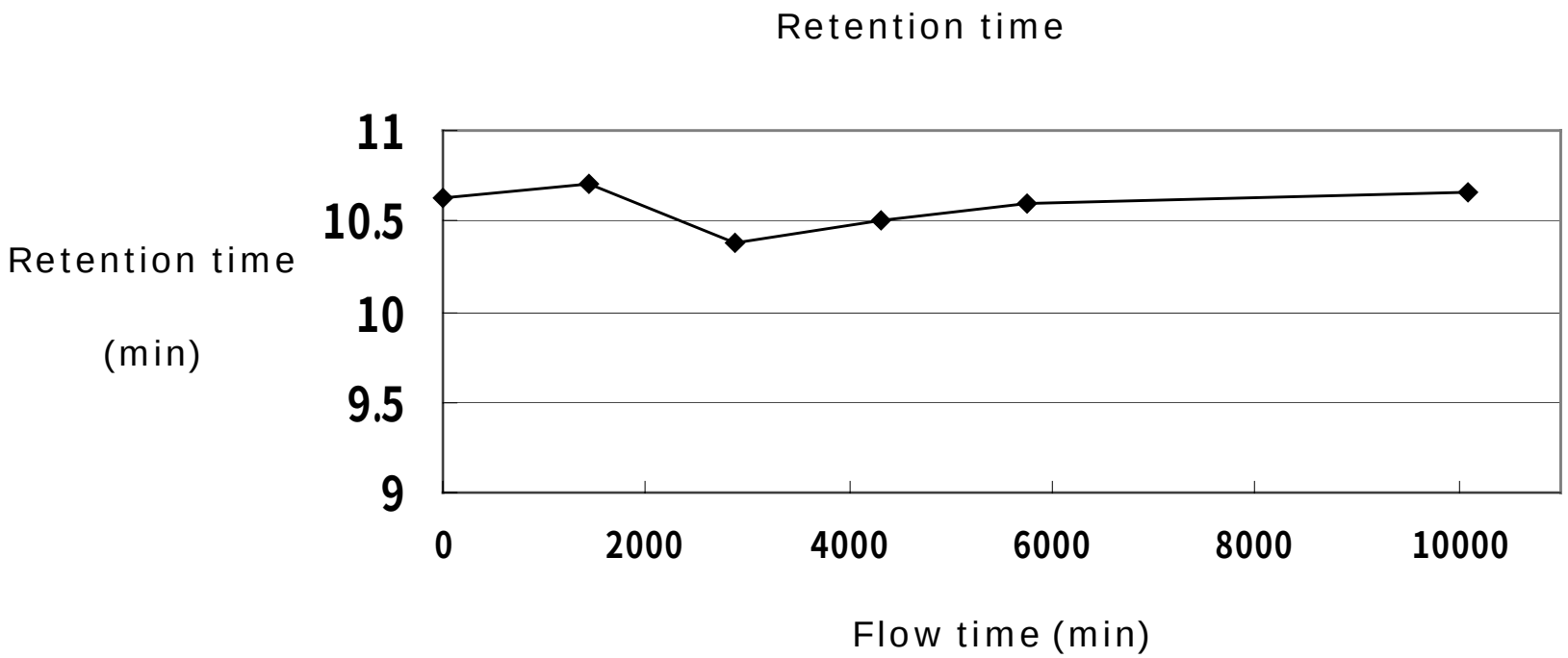

**Analysis Condition:** **Inertsil HILIC 4.6mmI.D.x250mm 5μm, Eluent: Acetonitrile : Water = 65 : 35 (w/w), Flow Rate: 1mL/min**
**Oven Temp: 40°C, Detector: RI**
**Sample: 1.maltose 2. maltotriose 3. maltotetraose 4. maltopentaose 5. maltohexaose 6. maltoheptaose**

# Analysis of nucleic-acid base using Inertsil HILIC




**Analysis Condition:** **Inertsil HILIC 4.6mmI.D.x250mm 5μm, Eluent: Acetonitrile : Water = 85:15(w/w), Flow rate: 1ml/min, Oven Temp: 40°C, Detector: UV254nm**

**Sample: 1. thymine 2. uracil 3. uridine 4. adenosine 5. cytosine 6. cytidine 7. guanosine**




**Analysis Condition** Inertsil HILIC 4.6mmI.D.x150mm 5mm, Eluent: Acetonitrile : Water = 10:90(w/w),
Flow Rate: 1ml/min, Oven Temp: Ambient, Detector: UV254nm
Sample: paraben C4 (paraoxy benzoiacid C4)