

# HPLC Analysis of TFA

<https://sielc.com/Application-HPLC-Analysis-of-TFA>

## Chromatogram

**Column:** Obelisc N  
**Mobile phase:** ACN-60%, H<sub>2</sub>SO<sub>4</sub>-0.05%  
**Sample:** 3 mg/mL in water  
**Injection:** 1  $\mu$ L

Plate count: 8564  
Peak symmetry: 1.09

**Column:** Atlantis T3®  
**Mobile phase:** ACN-5%, H<sub>2</sub>SO<sub>4</sub>-0.05%  
**Sample:** 3 mg/mL in water  
**Injection:** 1  $\mu$ L

Plate count: 5919  
Peak symmetry: 0.35

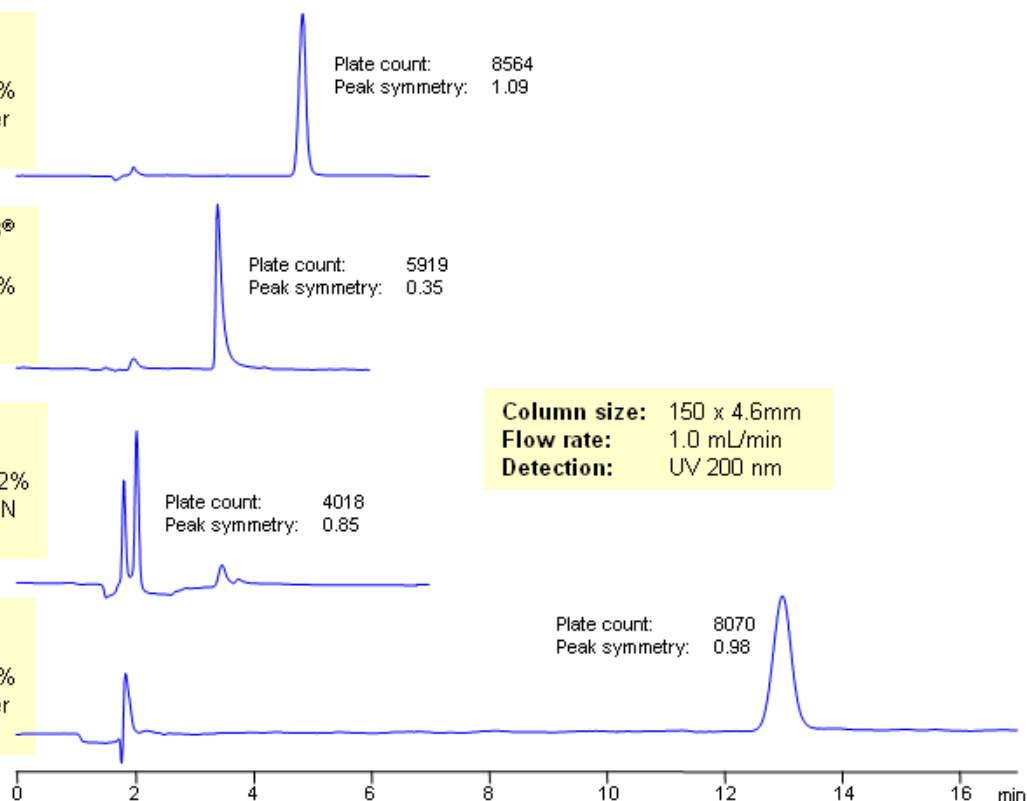
**Column:** ZIC®-HILIC  
**Mobile phase:** ACN-95%, H<sub>3</sub>PO<sub>4</sub>-0.2%  
**Sample:** 3 mg/mL in ACN  
**Injection:** 1  $\mu$ L

Plate count: 4018  
Peak symmetry: 0.85

**Column size:** 150 x 4.6mm  
**Flow rate:** 1.0 mL/min  
**Detection:** UV 200 nm

**Column:** Obelisc N  
**Mobile phase:** ACN-70%, H<sub>3</sub>PO<sub>4</sub>-0.2%  
**Sample:** 3 mg/mL in water  
**Injection:** 1  $\mu$ L

Plate count: 8070  
Peak symmetry: 0.98



## Description

Dual functionality of Obelisc N column allows to retain and provide efficient peaks of strong carboxylic acids such as TFA. Simple UV quantitation and identification method became possible due to the unique properties of this stationary phase. In case of an RP separation poor retention and peak symmetry was obtained at a very low concentration of ACN. Sulfuric acid was used to suppress ionization of TFA to increase the hydrophobicity. In case of a typical HILIC column the phosphoric acid was used to increase ionization to make TFA more polar to enhance polar retention. The types of columns that do not have the mixed mode nature of Obelisc N can't provide significant retention and efficiency.