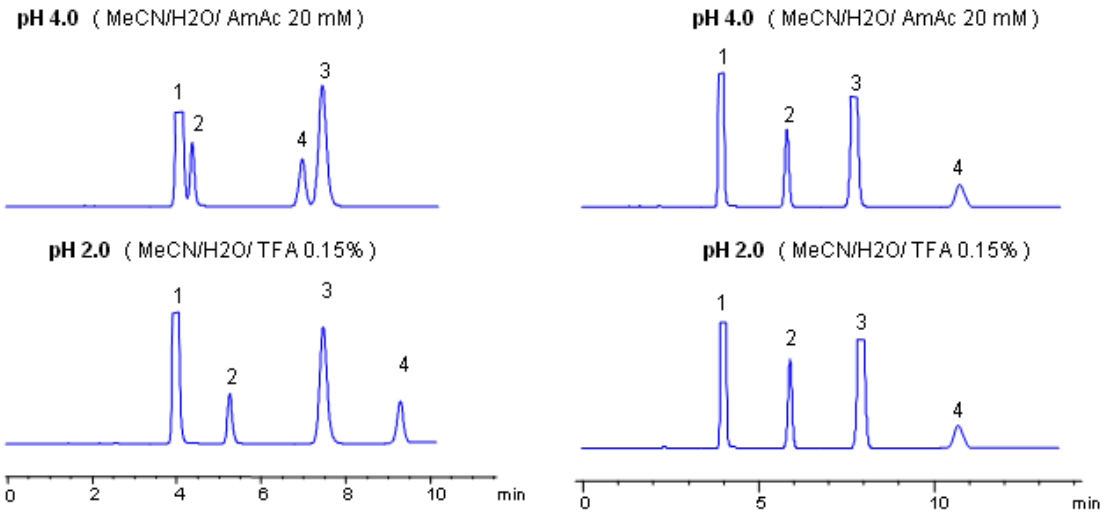
HPLC Separation of Methyl Paraben, Benzonitrile, Propyl Paraben, and Toluene on Mixed-Mode and Reverse Phase Columns

Column:	**Obelisc R**
Column size:	150 x 4.6 mm
Flow:	1.0mL/min
Detection:	UV 270 nm

1. Methyl paraben
2. Benzonitrile
3. Propyl paraben
4. Toluene

Column:	**Zorbax SB-AQ**
Column size:	150 x 4.6 mm
Flow:	1.0mL/min
Detection:	UV 270 nm



Parabens are common preservatives in pharmaceutical and cosmetic industries. They are esters of p-hydroxybenzoic acid. Method for separation of methyl paraben, propyl paraben, benzonitrile and toluene was developed on a Obelisc R column. All four compounds are neutral and are retained by reverse-phase mechanism. In case of reversed-phase stationary phase, no effect of pH is observed. Retention time for all four compounds changes on an Obelisc R column when pH is changed. pH of the mobile phase affects ionization state of stationary phase. Obelisc R column has C12 carbon chain and carboxylic acid with pKa of 4. At lower pH (pH 2, TFA), carboxylic acid of stationary phase is not ionized and thus adds hydrophobicity to stationary phase. Obelisc R column can be used for analysis of basic, acidic and neutral compounds with suitable detection techniques – UV, ELSD, CAD, LC/MS.

SIELC has developed the Obelisc™ columns, which are mixed-mode and utilize Liquid Separation Cell technology (LiSC™). These cost-effective columns are the first of their kind to be commercially available and can replace multiple HPLC columns, including reversed-phase (RP), AQ-type reversed-phase, polar-embedded group RP columns, normal-phase, cation-exchange, anion-exchange, ion-exclusion, and HILIC (Hydrophilic Interaction Liquid Chromatography) columns. By controlling just three orthogonal method parameters - buffer concentration, buffer pH, and organic modifier concentration - users can adjust the column properties with pinpoint precision to separate complex mixtures.

Method Parameters

Column	Obelisc R, 4.6×150 mm, 5 µm, 100 Å
Mobile Phase	MeCN/H2O
Buffer	AmAc, TFA
Flow Rate	1.0 mL/min
Detection	UV, 270 nm

Quelle: https://sielc.com/Application-HPLC-Separation-of-Methyl-Paraben-Benzonitrile-Propyl-Paraben-and-Toluene-on-Mixed-Mode-and-Reverse-Phase-Columns