

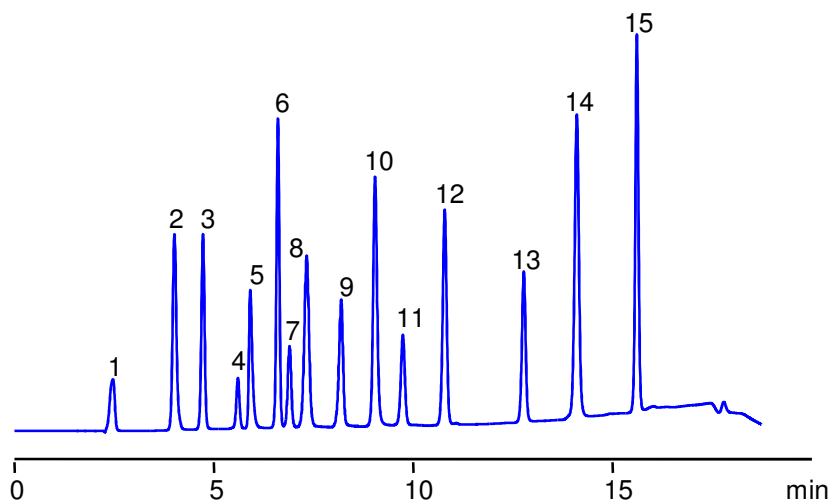
Cool Applications

"Making Tough LC Applications Look Cool"

Universal HPLC-UV Method for Complex Mixtures

Column:	Primesep 200
Part number:	200-46.150.0510
Column size:	4.6 x 150mm, 5 um, 100A
Mobile phase:	A: 5% ACN with 0.05% H ₂ SO ₄ B: 80% ACN with 0.25% H ₂ SO ₄ From 100% A to 50% A in 10 min, then to 25% A in 6 minutes
Flow rate:	1.0 ml/min
Detection:	215 nm

1	Uracil (PN)
2	Epinephrine (PB)
3	DOPA (PB)
4	2,6-Lutidine (PB)
5	Benzylamine (PB)
6	Hydroxytryptophan (PB)
7	Homovanillic acid (PA)
8	Phenol (PN)
9	Tryptophan (PB)
10	2,3-DHBA (PA)
11	Benzoic acid (PA)
12	Methylparaben (HN)
13	Ethylparaben (HN)
14	Toluene (HN)
15	Amitriptyline (HB)



Application Comments

Analytical chemists face multiple complex separations everyday. Very often, complex mixtures containing various compounds need to be analyzed in a single run. Traditional reversed-phase chromatography has challenges for retention of polar-neutral, polar-acidic and polar-basic compounds in mixtures with hydrophobic compounds.

We have developed a universal screening method for analysis of complex mixtures containing polar-neutral, polar-basic, polar-acidic, hydrophobic-neutral and hydrophobic-basic compounds.

The method employs Primesep 200 mixed-mode reversed-phase cation-exchange column and a simple mobile phase containing ACN/water/sulfuric acid. The low pH of the mobile phase helps suppress ionization of polar-acidic compounds, making them slightly hydrophobic. Hydrophobic and hydrophilic neutral compounds are retained by RP mechanism, while basic hydrophilic and basic hydrophobic compounds are retained by cation-exchange mechanism.

Abbreviations: PN-polar neutral, PB-polar basic, PA-polar acidic, HN-hydrophobic neutral, HB-hydrophobic basic