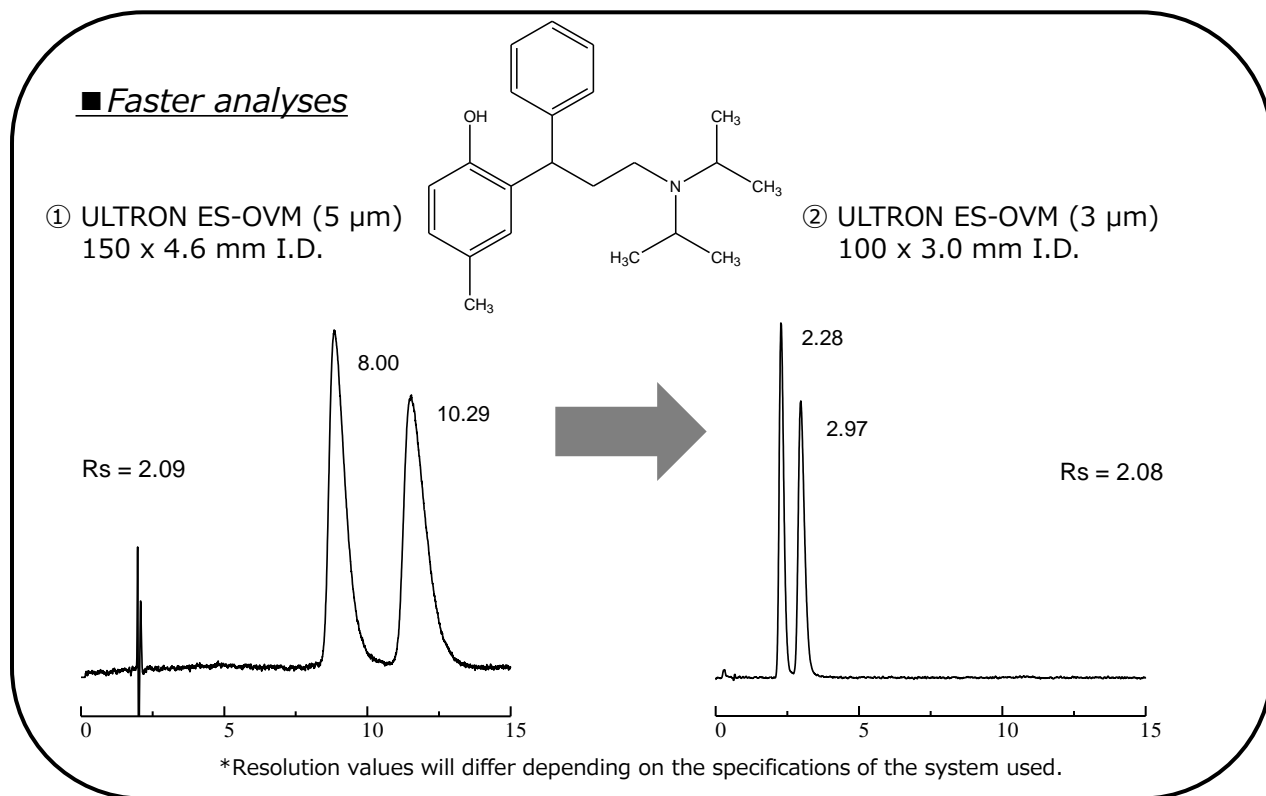


Analysis of tolterodine using the ULTRON ES-OVM (3 μm)

Shown below are comparative analyses of tolterodine performed using ULTRON ES-OVM 5 μm (150 x 4.6 mm I.D.) and ULTRON ES-OVM 3 μm (100 x 3.0 mm I.D.) columns.



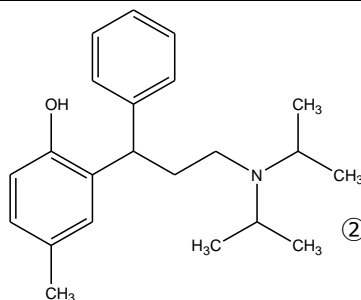
Column: ULTRON ES-OVM (5 μm)/ULTRON ES-OVM (3 μm)
 Column size: 150 x 4.6 mm I.D./100 x 3.0 mm I.D.
 Column temp.: 25°C
 Mobile phase: 20 mM KH_2PO_4 (pH 4.6)/ CH_3CN = 92/8
 Flow rate: 1.0 mL/min

Detection: UV-281 nm
 Sample: Tolterodine 250 mg/L (in methanol)
 Injection vol.: 2.0 μL (ES-OVM, 5 μm 150 x 4.6 mm I.D.)
 0.5 μL (ES-OVM, 3 μm 100 x 3.0 mm I.D.)

Features of the ULTRON ES-OVM (3 μm) (compared to the 5 μm column)

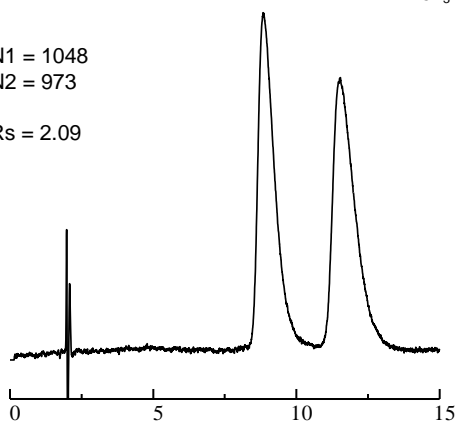
- Maximum operating pressure of 30 MPa.
- Can be used in LC/MS systems as well.
- Employs a 3 μm packing material for higher peak resolution and theoretical plate numbers.
- Enables significant reductions in analysis times while maintaining high theoretical plate numbers.
- Enables further improvements in performance with optimization of LC system tubing and flow cells.
- 9 column length and inner diameter combinations available.

■ **Greater analytical performance**
(high resolution)



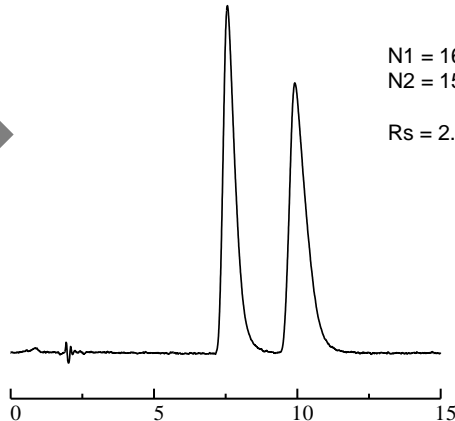
① ULTRON ES-OVM (5 μm)
150 x 4.6 mm I.D.

N1 = 1048
N2 = 973
Rs = 2.09



② ULTRON ES-OVM (3 μm)
100 x 3.0 mm I.D.

N1 = 1650
N2 = 1500
Rs = 2.67



*Theoretical plate numbers and resolution values will differ depending on the specifications of the system used.

Column: ULTRON ES-OVM (5 μm)/ULTRON ES-OVM (3 μm)
Column size: 150 x 4.6 mm I.D./100 x 3.0 mm I.D.
Column temp.: 25°C
Mobile phase: 20 mM KH_2PO_4 (pH 4.6)/ CH_3CN = 92/8
Flow rate: 1.0 mL/min (ES-OVM, 5 μm 150 x 4.6 mm I.D.)
0.28 mL/min (ES-OVM, 3 μm 100 x 3.0 mm I.D.)

Detection: UV-281 nm
Sample: Tolterodine 250 mg/L (in methanol)
Injection vol.: 2.0 μL (ES-OVM, 5 μm 150 x 4.6 mm I.D.)
0.5 μL (ES-OVM, 3 μm 100 x 3.0 mm I.D.)

ULTRON ES-OVM (3 μm) line-up

Application	Semi-micro LC	Semi-micro LC Conventional LC	Conventional LC
Column dimensions Length x I.D. (mm)	50 x 2.1	50 x 3.0	50 x 4.6
	100 x 2.1	100 x 3.0	100 x 4.6
	150 x 2.1	150 x 3.0	150 x 4.6



Please feel free to contact us with questions related to analyses.
Column screening services are also available.