

# SHINWA EXPRESS

*Application*2015  
October

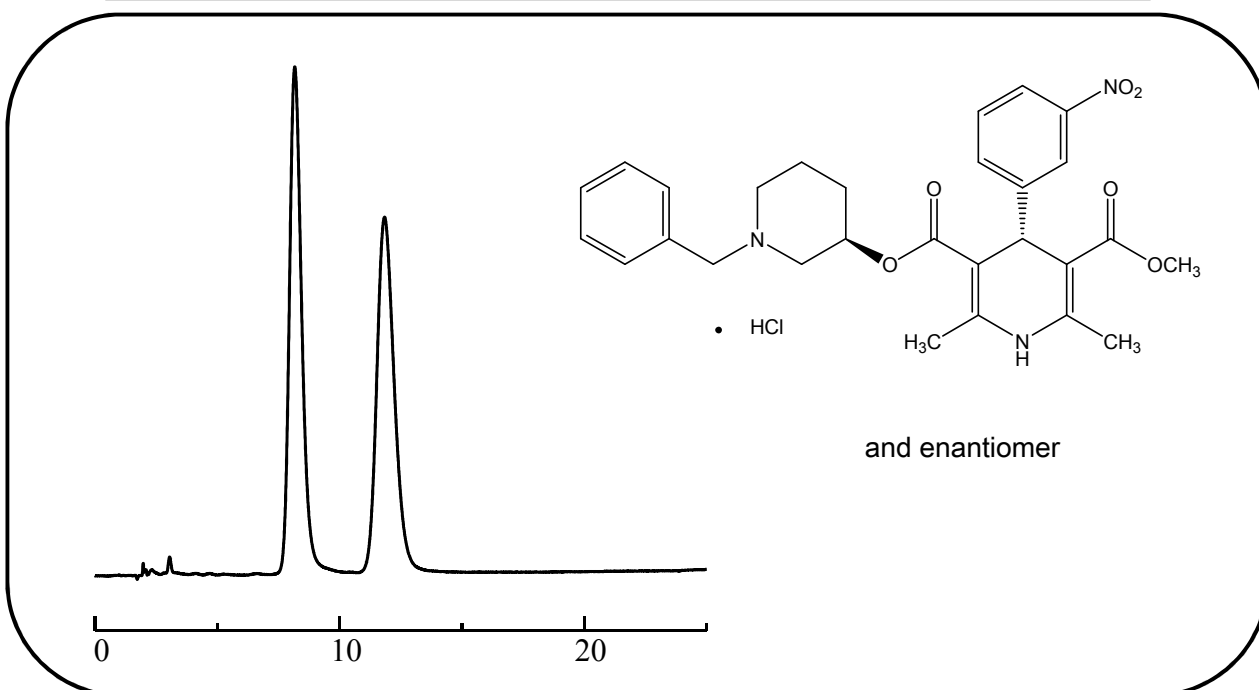
VOL. 69

## Analysis of benidipine hydrochloride using the ULTRON ES-OVM

Benidipine hydrochloride can expand constricted blood vessels, decrease blood pressure and prevent from anginal attacks by expanding blood vessels in hearts through the influence of the calcium antagonistic action that avoids calcium flowing into cells of blood vessels.

Shown below is a reversed-phase analysis of benidipine hydrochloride performed using the ULTRON ES-OVM.

### Benidipine hydrochloride (calcium antagonist)



Column: ULTRON ES-OVM (5  $\mu$ m)  
Column size: 150 mm L x 4.6 mm I.D.  
Mobile phase: 20 mM  $\text{KH}_2\text{PO}_4$ (pH 4.6)/ $\text{CH}_3\text{CN}$ = 90/10  
Flow rate: 1.0 mL/min

Column temp.: 25°C  
Detection: UV-240 nm  
Sample: 0.2 mg/L (in ethanol)  
Injection vol.: 2  $\mu$ L

#### ●Features of the ULTRON ES-OVM

1. Particularly effective for separations of chiral compounds.
2. Employs a highly denaturation resistant protein ligand\* (ovomucoid) as a stationary phase.
3. Displays a wide range of chiral recognition.
4. No sample pretreatment required for chiral separations. (Blood plasma samples can be analyzed without pretreatment.)
5. Can be used for reversed-phase analyses.
6. Trace analyses possible (several nanograms).

\*Ligand: A substance that binds selectively with a specific receptor.

**SHINWA CHEMICAL INDUSTRIES LTD.**

50-2 Kagekatsu-cho, Fushimi-ku  
Kyoto 612-8307 Japan  
TEL: +81-75-621-2360 FAX: +81-75-602-2660  
E-mail: [info@shinwa-cpc.co.jp](mailto:info@shinwa-cpc.co.jp)  
Website: <http://shinwa-cpc.co.jp/en/>

## ■ Analytical column specifications ■

Product name	Particle size (μm)	Column dimensions Length × I.D. (mm)
ULTRON ES-OVM	5	150 × 2.0
ULTRON ES-OVM	5	150 × 4.6
ULTRON ES-OVM	5	150 × 6.0
ULTRON ES-OVM-C	5	150 × 4.6
ULTRON ES-OVM	10	250 × 4.6
ULTRON ES-OVM Prep (preparative)	10	250 × 20.0

## ■ Guard column specifications ■

Product name	Particle size (μm)	Column dimensions Length × I.D. (mm)
ULTRON ES-OVM.G	5	10 × 4.0
ULTRON ES-OVM Prep.G (preparative guard column)	10	15 × 8.0
ULTRON ES-OVM (guard cartridges (x2))	5	5 × 2.0
Guard cartridge holder (with adaptor)	For 5 × 2.0 mm columns	
ULTRON ES-OVM (guard cartridges (x 2))	5	10 × 4.6
Guard cartridge holder (with adaptor)	For 10 × 4.6 mm columns	

### ● Protecting columns using guard columns

By using guard columns together with analytical columns, analytical columns can be protected from contamination, enabling longer column lifetimes. The use of guard columns is particularly recommended when analyzing samples containing large amounts of impurities.

Guard cartridges are also available when guard columns are changed frequently.

Please use guard columns with the same or smaller inner diameter than that of the analytical column being used.

### ● ULTRON ES-OVM-C

Clopidogrel bisulfate evaluation conditions based on USP standards employed for shipping inspections.  
(Performance reports included with columns.)



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

Please be aware that specifications and prices are subject to change without prior notification.