

## HPLC Column For Enantiomer Separation

The **ULTRON ES** series are columns for enantiomer separation.

Columns which are packed with protein immobilized silica (**ULTRON ES-OVM**, **ULTRON ES-PEPSIN**, **ULTRON ES-BSA**) and chemically bonded cyclodextrin (**ULTRON ES-CD**, **ULTRON ES-PhCD**).

### ULTRON ES-OVM

#### Characteristics

Ultron ES-OVM is a chiral separation column immobilized with ovomucoid which is strong protein for denaturation. (US PATENT 6027648 Eisai Co., LTD.)

A wide range of chiral recognition.

No sample preparation for optical separation.

Aqueous mobile phase can be used in the separation .

A trace analysis can be performed (ng level) .

#### Applications

- Pharmaceutical Compounds, Pesticides and Organic Compounds

Column	Particle Size (μm)	Column Size Length × Inner Diameter (mm)
ULTRON ES-OVM (Narrow Bore)	5	150 × 2.0
ULTRON ES-OVM (for Analytical)		150 × 4.6
ULTRON ES-OVM (for Analytical)		150 × 6.0
ULTRON ES-OVM.G (Guard Column)		10 × 4.0
ULTRON ES-OVM (for Analytical)	10	250 × 4.6
ULTRON ES-OVM Prep (for Preparative)		250 × 20.0
ULTRON ES-OVM Prep.G (Guard Column for Preparative)		15 × 8.0
ULTRON ES-OVM (Two Guard Cartridges )	5	5 × 2.0
ULTRON ES-OVM (Two Guard Cartridges)		10 × 4.6
Holder for Guard Cartridge (with Adaptor)	For 5 × 2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10 × 4.6 mm column	

### ULTRON ES-PEPSIN

#### Characteristics

ULTRON ES-PEPSIN is an enantiomer separation column immobilized with pepsin which is the polypeptide dialytic enzyme of the pig stomach mucous membrane origin.

ULTRON ES-PEPSIN is effective for the enantiomer separation of amino alcohols such as  $\alpha$ -blocker medicines.

The sample preparation for optical isomer separation is not necessary.

Aqueous mobile phase can be used in the separation.

A trace analysis can be performed (ng level).

#### Applications

- Pharmaceutical Compounds, Pesticides and Organic Compounds

Column	Particle Size (μm)	Column Size Length × Inner Diameter (mm)
ULTRON ES-PEPSIN (for Analytical)	5	150 × 4.6
ULTRON ES-PEPSIN.G (Guard Column)		10 × 4.0

## ULTRON ES-BSA

### Characteristics

ULTRON ES-BSA is bovine serum albumin immobilized column for enantiomer separation.

ULTRON ES-BSA is performed an excellent enantiomer separation for acidic compounds such as arylpropionic acid drugs.

The sample preparation for optical isomer separation is not necessary.

Aqueous mobile phase can be used in the separation.

A trace analysis can be performed (ng level) .

### Applications

- Pharmaceutical compounds, Pesticides and Organic compounds

Column	Particle Size (μm)	Column Size Length x Inner Diameter (mm)
ULTRON ES-BSA (for Analytical)	7	150 x 4.6
ULTRON ES-BSA.G (Guard Column)		10 x 4.0

## ULTRON ES-CD

## ULTRON ES-PhCD

ULTRON ES-CD and ULTRON ES-PhCD are enantiomeric separation columns chemically bonded with - cyclodextrin (CD) and phenylcarbamated -cyclodextrin (PhCD), respectively.

### Characteristics

ULTRON ES-CD and ULTRON ES-PhCD are effective for the enantiomeric separation of hydrophobic cyclic compounds.

Mobile phase of both reverse-phase and normal-phase modes can be used for the separation.

A wide range of enantiomeric compounds can be separated with ULTRON ES-CD or ULTRON ES-PhCD.

The columns show excellent stability and durability.

### Applications

- Pharmaceutical compounds, Pesticides and Organic compounds

Column	Particle Size (μm)	Column Size Length x Inner Diameter (mm)
ULTRON ES-CD (Narrow Bore)	5	150 x 2.0
ULTRON ES-CD (for Analytical)		150 x 6.0
ULTRON ES-CD.G (Guard Column)		10 x 4.0
ULTRON ES-CD (Two Guard Cartridges)		5 x 2.0
ULTRON ES-CD (Two Guard Cartridges)		10 x 4.6
Holder for Guard Cartridge (with Adaptor)		For 5 x 2.0 mm column
Holder for Guard Cartridge (with Adaptor)		For 10 x 4.6 mm column
ULTRON ES-PhCD (Narrow Bore)	5	150 x 2.0
ULTRON ES-PhCD (for Analytical)		150 x 6.0
ULTRON ES-PhCD.G (Guard Column)		10 x 4.0
ULTRON ES-PhCD (Two Guard Cartridges)		5 x 2.0
ULTRON ES-PhCD (Two Guard Cartridges)		10 x 4.6
Holder for Guard Cartridge (with Adaptor)		For 5 x 2.0 mm column
Holder for Guard Cartridge (with Adaptor)		For 10 x 4.6 mm column