



Thermo Scientific EASY-Spray Columns

## So simple, it's EASY - Unique design and performance in nano and capillary LC-MS

### Benefits

- Highest separation performance in nano and capillary-flow LC-MS columns
- Easy, 'plug-and-spray' format for nano and capillary LC
- Temperature control for maximum reliability and performance
- Thermo Scientific nanoViper Fingertight Fittings provide simple connectivity and eliminate dead volumes

### Keywords

EASY-Spray, capillary LC, LC-MS, peptide, reproducibility, nano LC, proteins, proteomics

### Introduction

The unique Thermo Scientific™ EASY-Spray™ design provides uncompromised performance and ease of use in nano and capillary LC-MS. The highest quality chromatographic media and device components ensure high precision and robustness for routine operation.

### *Integrated column/emitter design*

Making the perfect zero dead volume connection is critical in order to obtain the best nano and capillary-flow LC-MS performance. EASY-Spray columns provide a fully integrated and temperature controlled column-emitter design with only a single Thermo Scientific™ nanoViper™ Fingertight Fitting connection between the LC and the MS ion source.

This integrated design eliminates dead volumes, resulting in ultra-sharp peaks that deliver outstanding peak capacity and maximize peptide coverage. Peak widths of less than 3 seconds are routinely achievable (as shown in Figure 2).

### Outstanding reproducibility and reliability

Column-to-column reproducibility is an extremely important parameter in proteomics, particularly when running label-free quantitation, large experiments or multi-site collaborations.

Strict quality control ensures EASY-Spray columns deliver class leading reproducibility and reliability. Each column is individually tested via LC-MS to ensure consistently high performance.

EASY-Spray columns provide stable performance over time as shown in Figure 1 below. Retention time precisions of 0.2% RSD (Relative Standard Deviation) match today's requirements for proteomics researchers.

### Rugged performance up to 1200 bar

The EASY-Spray column assembly is designed for use with UHPLC to fully utilize the benefits of small particles and long columns. The use of a nanoViper fitting provides simple, finger-tight connection to 1200 bar.

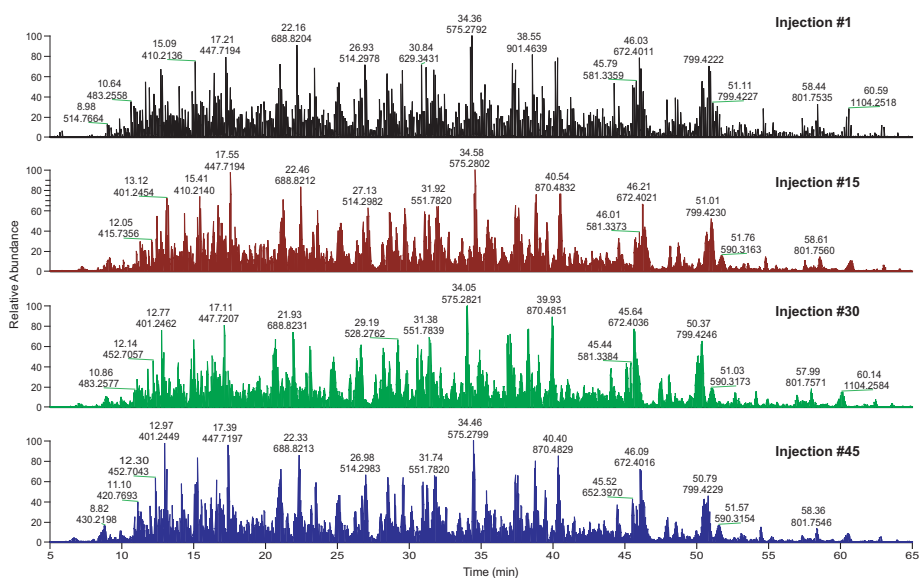
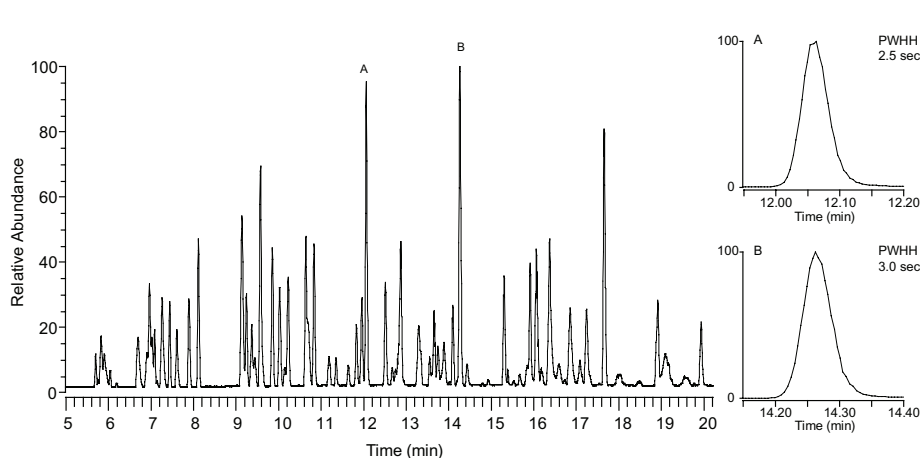


Figure 1. Selected base peak chromatograms from 45 repeat runs of 500 ng *E.coli* digest. EASY-Spray Column ES801 (15 cm x 50 µm ID, Thermo Scientific™ Acclaim™ PepMap™ RSLC C18, 2 µm).



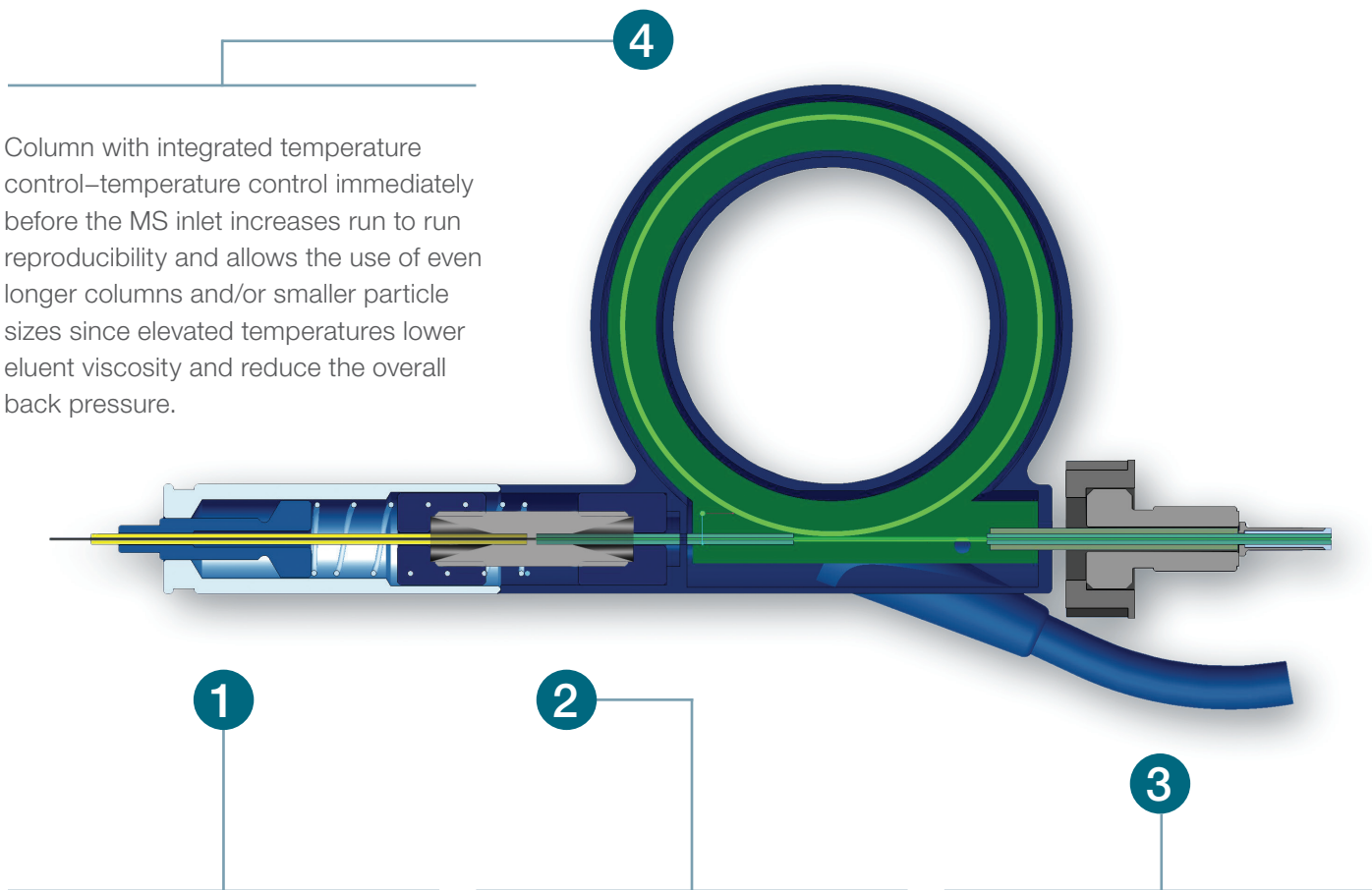
Column: EASY-Spray Column ES801 (15 cm x 50 µm ID Acclaim PepMap RSLC C18, 2 µm)

Peak width A: 2.5s FWHM  
Peak width B: 3.0s FWHM

Data courtesy Karl Mechtler, Institute of Molecular Pathology (IMP), Vienna

Figure 2. EASY-Spray columns deliver ultra-sharp peaks

## EASY-Spray column design features



Column with integrated temperature control—temperature control immediately before the MS inlet increases run to run reproducibility and allows the use of even longer columns and/or smaller particle sizes since elevated temperatures lower eluent viscosity and reduce the overall back pressure.

Precision positioned glass emitter –quality controlled and polished fused silica emitter with a uniform inner diameter of 7  $\mu\text{m}$  in nano-flow and 20  $\mu\text{m}$  in capillary-flow delivers an exceptionally stable spray and extended emitter cap to protect tip from breakage

Integrated through-hole designed union ensures a high voltage connection is placed between the column outlet and emitter outlet.

Thermo Scientific nanoViper fitting: Easy-to-use stainless steel fingertight fitting to 1200 bar eliminates column damage due to over-tightening and experimental damage due to bad connections.

### EASY-Spray column options

EASY-Spray columns are designed to give proteomics researchers more than ever before: more throughput, more sensitivity, more separation power and more ease of use.

EASY-Spray columns are available with the following options:

- 15 cm  $\times$  75  $\mu\text{m}$  ID nano packed with 3  $\mu\text{m}$  C18 particles for routine applications
- 15 cm  $\times$  50  $\mu\text{m}$  ID nano columns packed with 2  $\mu\text{m}$  particles for extra sensitivity
- 15, 25, 50 and 75 cm  $\times$  75  $\mu\text{m}$  length nano columns packed with 2  $\mu\text{m}$  particles for greater peak capacity
- 15 cm  $\times$  150  $\mu\text{m}$  ID capillary columns packed with 2  $\mu\text{m}$  particles for high throughput applications
- 25 cm  $\times$  200  $\mu\text{m}$  ID capillary columns with PS-DVB Thermo Scientific™ PepSwift™ for top-down proteomics
- 15 cm  $\times$  75  $\mu\text{m}$  ID nano columns packed with core-enhanced Accucore C4, 2.6  $\mu\text{m}$ , for top-down proteomics



## Ordering information

Description	Particle size (µm)	Part number
EASY-Spray column, 15 cm × 75 µm ID, PepMap C18	3	ES900
EASY-Spray column, 15 cm × 50 µm ID, PepMap RSLC C18	2	ES901
EASY-Spray column, 25 cm × 75 µm ID, PepMap RSLC C18	2	ES902
EASY-Spray column, 50 cm × 75 µm ID, PepMap RSLC C18	2	ES903
EASY-Spray column, 15 cm × 75 µm ID, PepMap RSLC C18	2	ES904
EASY-Spray column, 75 cm × 75 µm ID, PepMap RSLC C18	2	ES905
EASY-Spray Capillary column, 15 cm × 150 µm ID, PepMap RSLC C18	2	ES906
EASY-Spray Accucore 150-C4 2.6 µm 15 cm × 75 µm	2.6	ES911
EASY-Spray column, 15 cm × 75 µm ID, PepMap C18 300 Å	5	ES912
*Note: Easy-Spray emitters are available to connect any column to the EASY-Spray source		
EASY-Spray emitter, nanoflow	–	ES991
EASY-Spray emitter, microflow	–	ES992

### Nano-Trap design - single piece, one direction trapping and elute

Description	Particle size (µm)	ID (µm)	Bed length (mm)	Total length (mm)	Part number
PepMap C18 100A - 2 PK	3	75	20	150	164535
PepMap C18 100A - 2 PK	3	75	20	70	164946
PepMap C18 100A - 2 PK	5	100	20	150	164564

### Cartridge design - multi-piece, one or two direction trapping and elute

Description	Particle size (µm)	ID (µm)	Length (mm)	Part number
PepMap C18 100A - 5 PK	5	300	5	160454
PepMap C18 100A - 5 PK	5	1000	15	160434
PepMap C8 100A - 5 PK	5	300	5	161194
PepMap C18 300A - 5 PK	5	300	5	163589
Accucore 150-C4 - 5 PK	5	300	5	16526-900379

### Trap Holders

µ-Pre-column holder, 5 mm, with 30 µm ID connecting tubing, nanoViper fittings	164469
µ-Pre-column holder, 5 mm, with 75 µm ID connecting tubing, nanoViper fittings	164650

Find out more at [thermofisher.com/EasySpray](https://thermofisher.com/EasySpray)

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