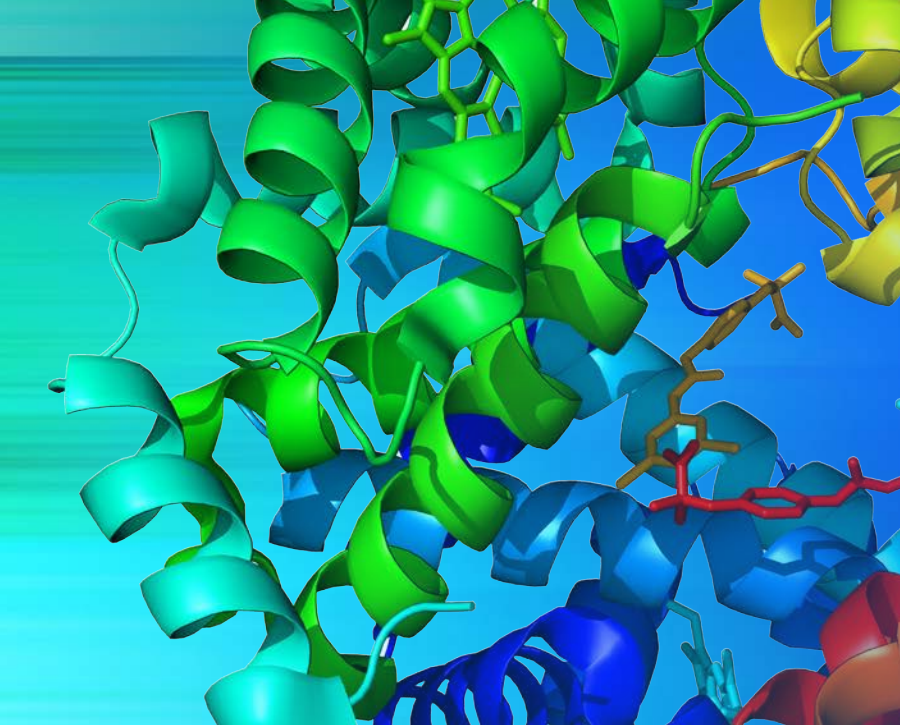


Thermo Scientific  
EASY-Spray Technology



**Plug-and-spray with**  
State-of-the-art performance

**Thermo**  
SCIENTIFIC

# Effortless nano electrospray ionization

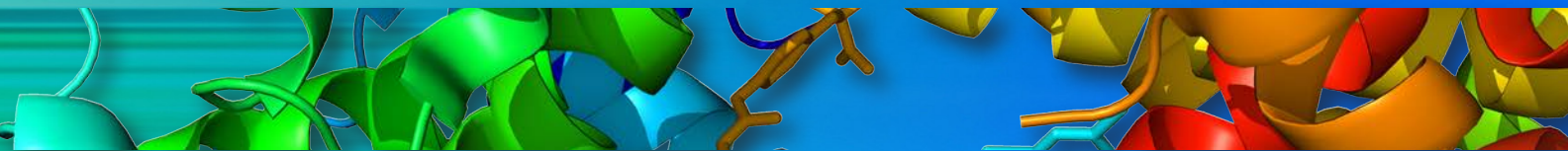
## Integrated design

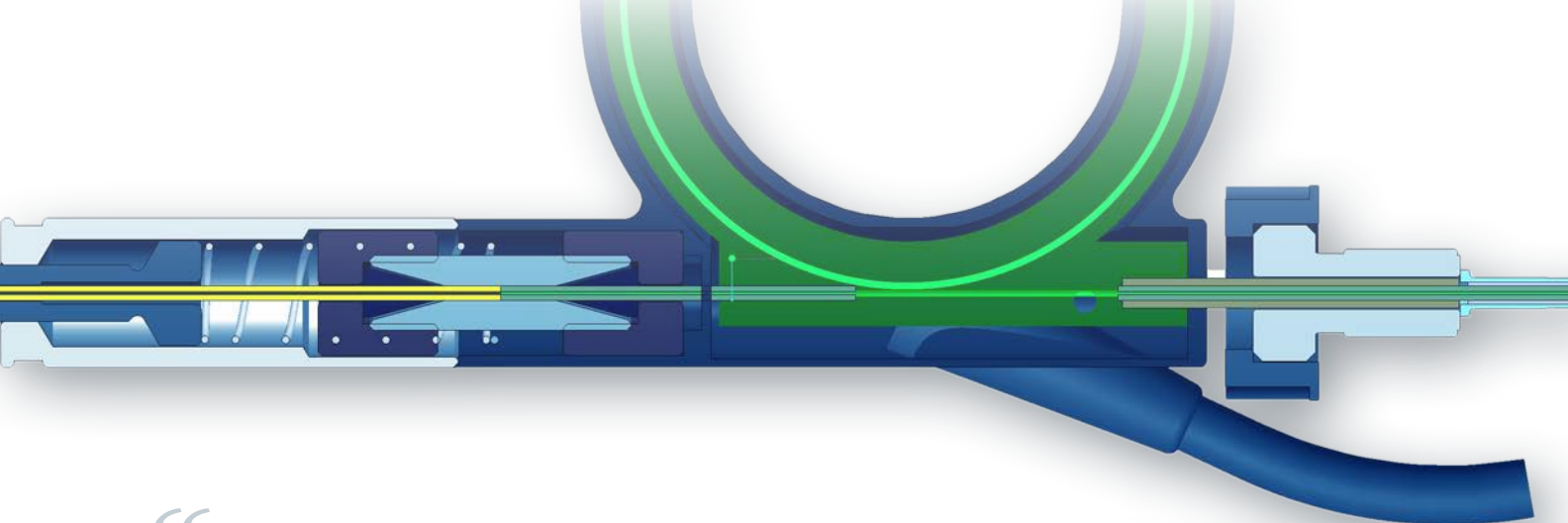


EASY-Spray source

Nano-flow LC-MS relies critically on perfect connections between several pieces of nano-bore tubing and high-voltage electrodes for the spray ionization. Thermo Scientific EASY-Spray technology provides an integrated and temperature-controlled column-emitter design using a single Thermo Scientific Dionex nanoViper connection between the LC and the EASY-Spray™ source to remove the most error-prone and difficult connections.

**Plug-and-spray nano-electrospray ionization combined with industry-proven columns: the Thermo Scientific EASY-Spray.**





“The optimization and reproducibility achievable by years of nanospray experience are built into the device.

Heated UHPLC 50 cm column chromatography was not easy until now!”

—Paul Taylor, PhD Hospital for Sick Children, Toronto, Canada.

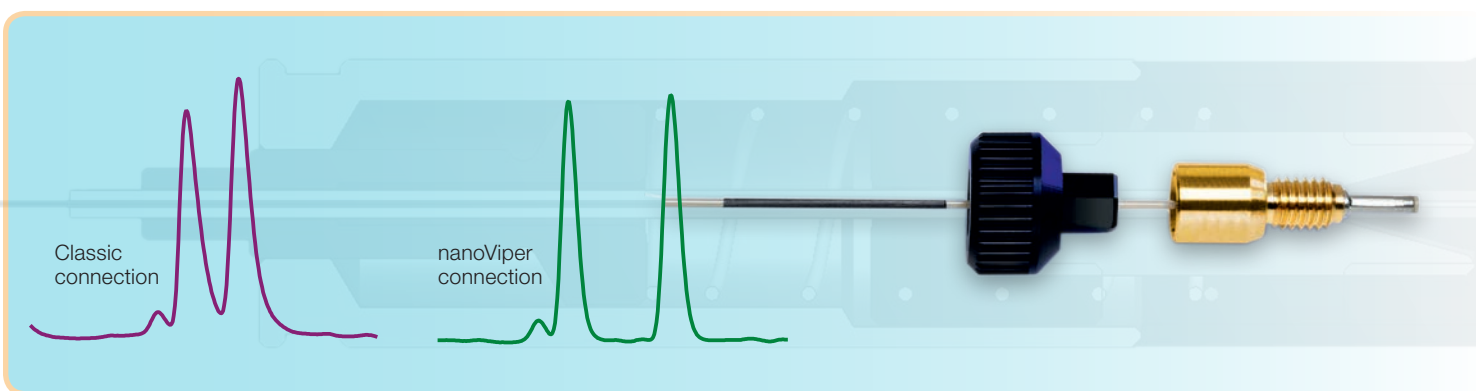
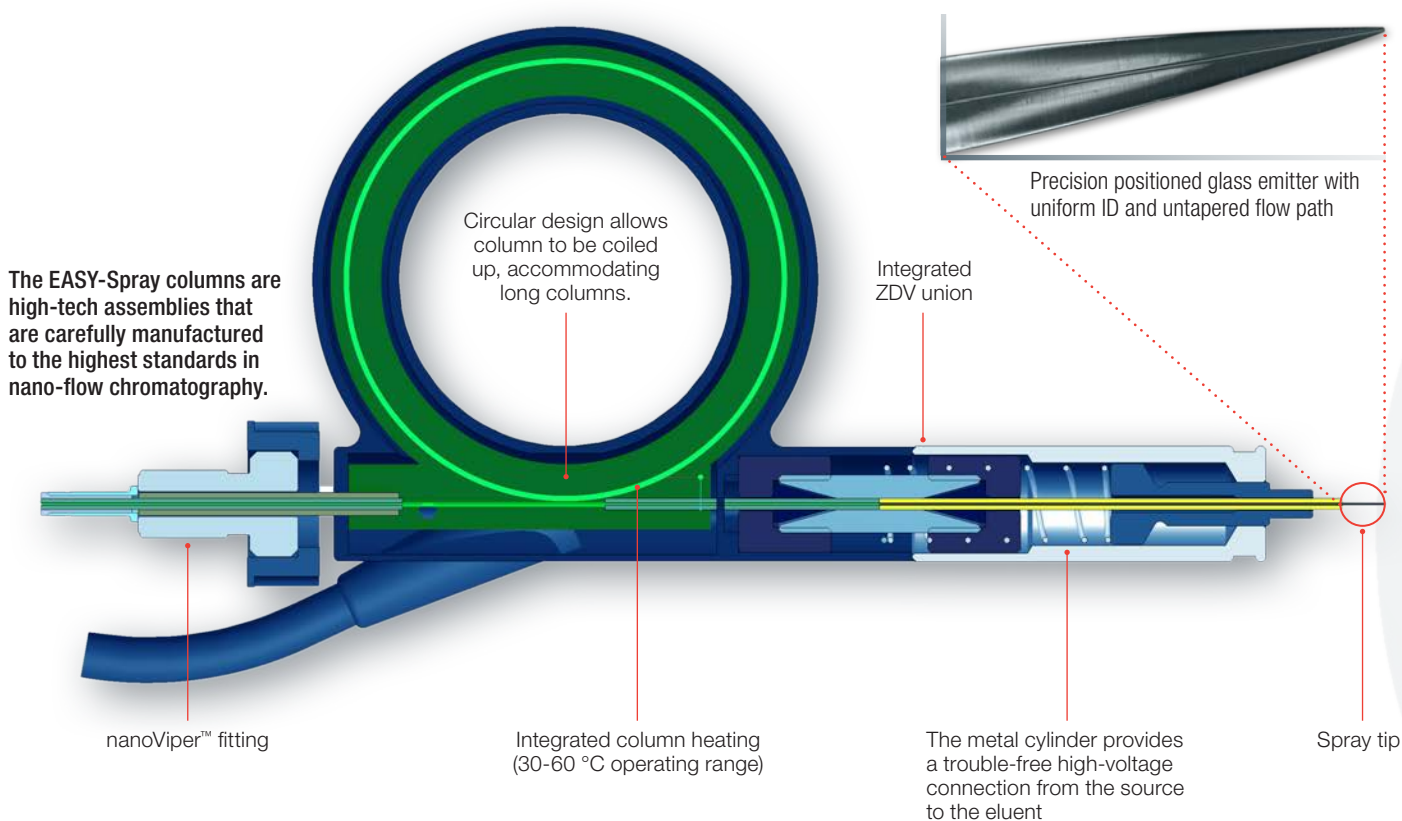
## More than ever before

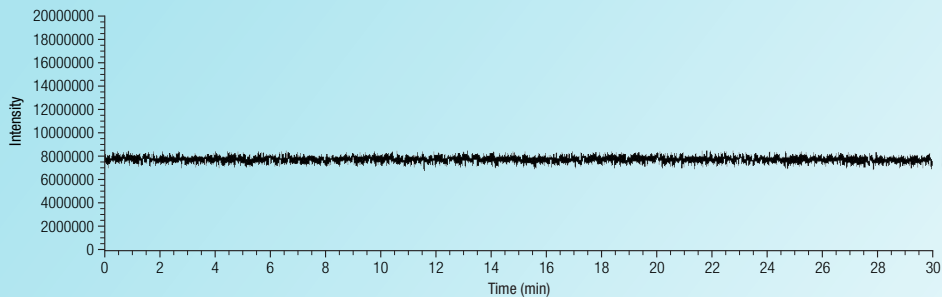
Thermo Scientific proteomics solutions are designed to give you more than ever before:

**more throughput, more sensitivity, more separation power and more ease of use.**



## Plug-and-spray nano-electrospray ionization





Camera provides light and a convenient, magnified view of the emitter tip

## Excellent Spray Stability

**Sample:** Singly charged polytyrosine peptide  
**MS:** Thermo Scientific LTQ Velos  
**Source setup:** EASY-Spray source direct infusion emitter

Simply press until it clicks into place

Forward/backward adjustment knob

Power and sensor cable for EASY-Spray columns

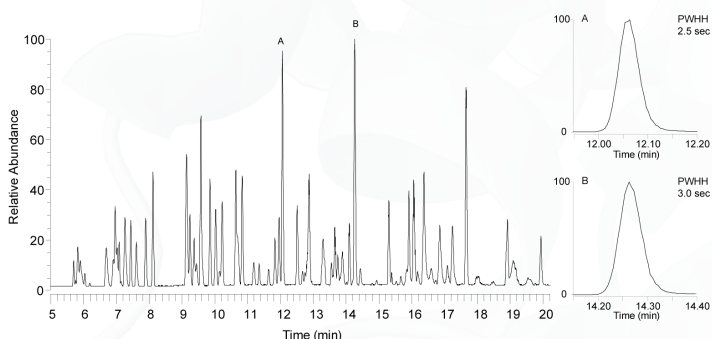
Temperature control display



# State-of-the-art performance

## Achieving state-of-the-art performance from nano-flow LS-MS was never easier: simply plug-and-spray

EASY-Spray delivers performance, reproducibility and reliable results.



**Column:** EASY-Spray ES801 (15 cm × 50 μm ID)  
Thermo Scientific Acclaim PepMap RSLC C18, 2 μm

**Peak width A:** 2.5s FWHM

**Peak width B:** 3.0s FWHM

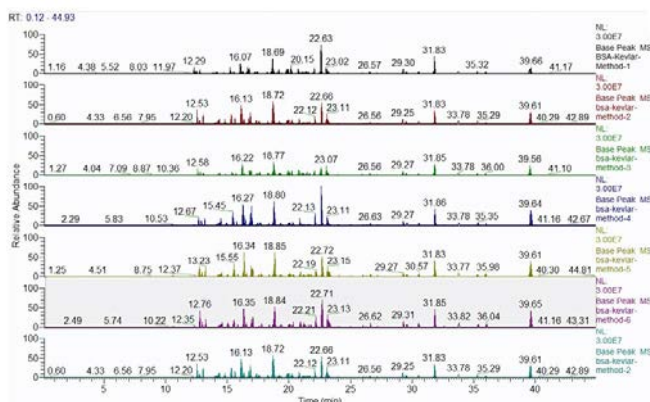
Courtesy of Karl Mechtler, Institute of Molecular Pathology (IMP), Vienna, Austria.

The combined column/sprayer fitted with nanoViper fittings eliminate dead volumes. The result: Ultra-sharp peaks (2.5-3.0 s full width half maximum) that maximize peptide coverage.

### Outstanding reproducibility

7 BSA runs on a Thermo Scientific TSQ Vantage triple stage quadrupole mass spectrometer. Retention time precision less than 0.2% RSD.

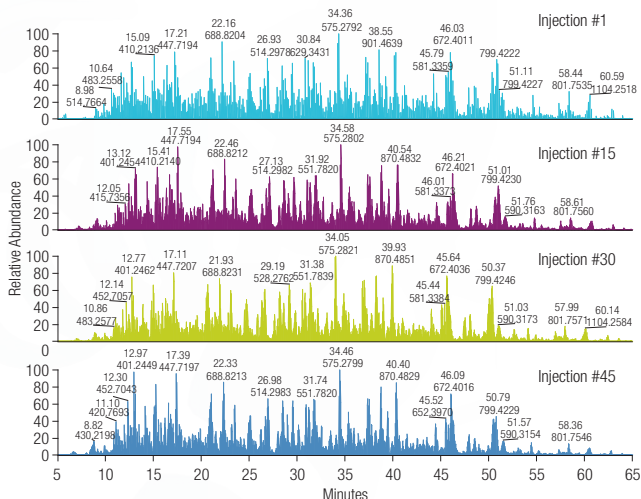
Courtesy of Paul Taylor and Thomas Kislinger, Hospital for Sick Children, Toronto, Canada.



### Reliable results every time

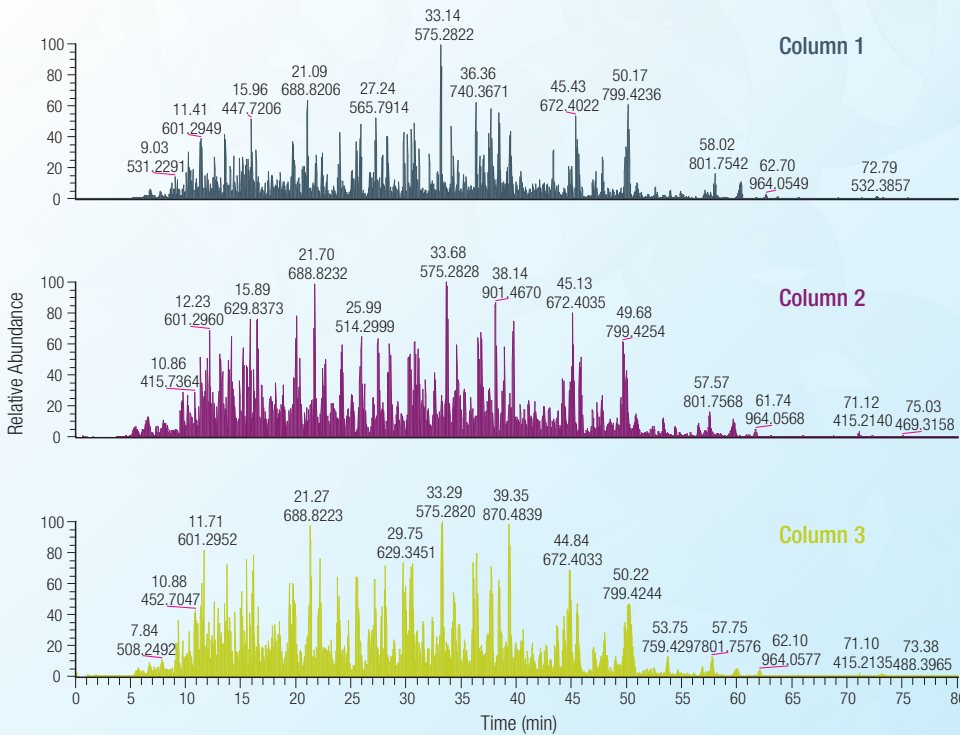
EASY-Spray provides stable performance over time to match today's requirements for proteomics researchers.

Selected base peak chromatograms from 500 ng samples of *E. coli* digest analyzed on a Velos Pro Orbitrap instrument with over 45 repeat runs. A 50 μm ID × 15 cm column was used for the separation. The gradient was 5% B to 30% B in 60 min at 300 nL/min. The column heater was set at 35 °C.



“Right off the shelf, with absolutely no optimization, the first injection gave me beautiful peaks with FWHM times of 2.5-3 seconds!”

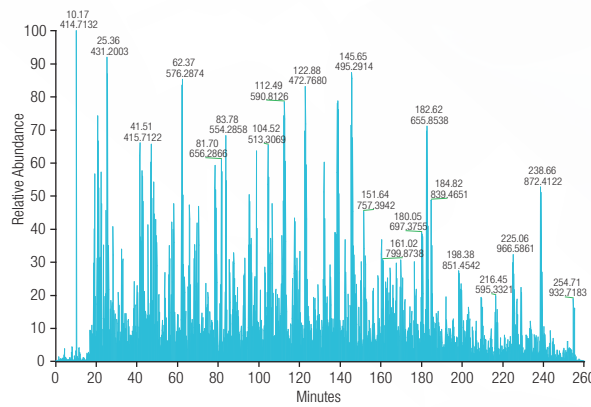
—Duncan Smith, PhD Paterson Institute for Cancer Research, Manchester, England.



## Excellent inter-column reproducibility

Column-to-column reproducibility is extremely important in proteomics, particularly when running big experiments or multi-site collaborations. The exacting assembly precision of EASY-Spray columns ensures class leading performance on these parameters.

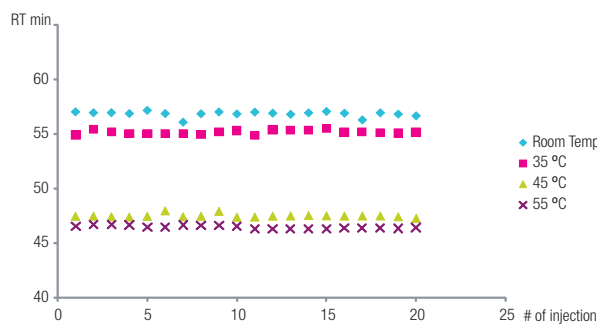
4,087 unique proteins were identified from a single HPLC separation of a 1000 ng human cell digest with a 50 cm EASY-Spray column.



## Amazing peak capacity

The entire assembly is designed for heavy use so you can utilize the full pressure range of your UHPLC front-end (up to 1000 bar) and benefit from small particles and long columns. Longer columns and longer gradients both contribute to more identifications.

RT reproducibility of peptide EAVNQVIALLDGALR from 500 ng *E. coli* complex sample for 20 repeat runs in different temperature ranges.



## Temperature control

Column 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 backpressure.

# Full compatibility

## EASY-Spray source is fully compatible with the following Thermo Scientific instrument families:



### Thermo Scientific EASY-nLC 1000

For effortless sample introduction.



### Thermo Scientific Dionex UltiMate 3000 RSLCnano

for versatile and flexible chromatography.



### EASY-Spray Source

Order No. ES081



### Discovery

The ultra-high resolution capability of the Thermo Scientific Orbitrap Elite mass spectrometer creates new possibilities in research and discovery.



### Quantification

The benchtop Thermo Scientific Q Exactive mass spectrometer is a powerful HR/AM instrument to identify, quantify, and confirm.



### Analysis

The Thermo Scientific Velos Pro is the pinnacle of ion trap mass spectrometry that delivers enhanced performance for complex sample analyses.



### Targeted

The Thermo Scientific TSQ Vantage triple stage quadrupole mass spectrometer delivers the highest sensitivity with the lowest noise for the quantitative analysis of small molecules, peptides, biosimilars, and biologics.

[www.thermoscientific.com/easyspray](http://www.thermoscientific.com/easyspray)

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