

# Separation of Biologically Active Increasing Length Peptides

**Author:**

Adam L. Moore, PhD.,  
Hamilton Company



# Application

Biologically active peptides harbor an important role in human health. They are associated with the development of new therapeutic health care products and as potential biologic pathway markers and metabolites in the detection of disease. As such, we have chosen peptides that increase in amino acid length to highlight how the PRP-3 (300 Å) HPLC stationary phase is a useful tool for the field of peptides. Analysis of the stationary phase indicates good separation between Angiotensin I and II biomarkers, while further providing baseline resolution between the remaining analytes. The chromatogram also presents the peak shape and resolution an analyst can expect when utilizing the PRP-3 stationary phase. We have chosen in this example the 7 µm particle for its minimal system back pressure (550 psi) with the resolution needed for isolation in both an analytical analysis and a scale up processes.

The PRP-3 is the perfect complement to any peptide isolation. The 300 Å particle pore size helps optimize the interaction of larger molecular weight peptides with the stationary phase while minimizing clogged pores. After analytical isolation is achieved, scale up is where the PRP-3 excels due to its ability to accommodate ~20% more sample loading before observing column overload compared to non- and superficially-porous stationary phases. Loading capacity is further optimized due to the absence of analyte absorption sites commonly found in silica ODS stationary phases like, acidic silanol groups. Despite lacking a silica core, the PRP-3 PSDVB particle provides the consistency and excellence that customers have come to expect from all Hamilton products.

Want more information about this and other applications?  
**Contact Hamilton today!**



# Chromatogram and Compound Results

## Column Information

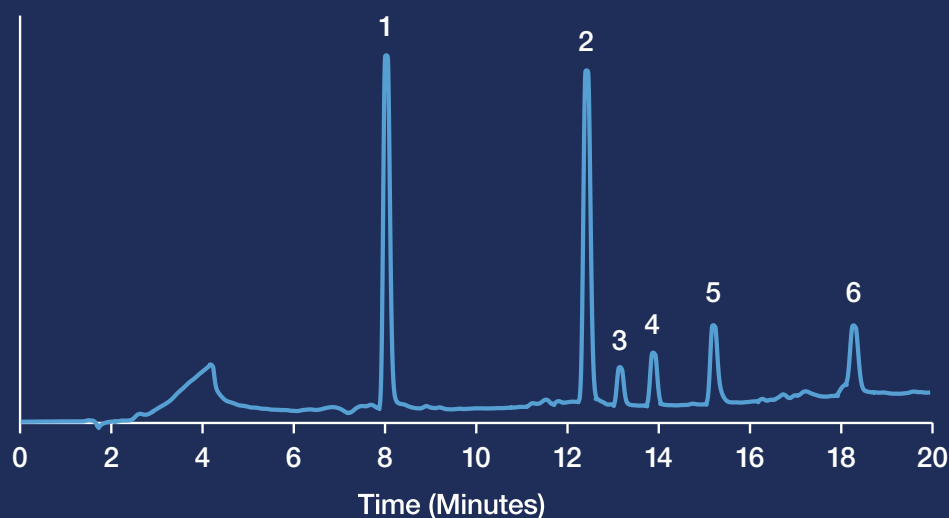
Packing Material	PRP-3, 7 $\mu$ m
Dimensions	150 x 4.1 mm
P/N	79466

## Chromatographic Conditions

Gradient	0.0 – 20.00 min. 0 – 50 %B
Temperature	30°C
Injection Volume	5 $\mu$ L
Detection	UV at 215 nm
Eluent A	H <sub>2</sub> O + 0.1% TFA
Eluent B	CH <sub>3</sub> CN + 0.09% TFA
Flow Rate	1.0 mL/min

## Compounds:

- 1: Angiotensin II
- 2: Angiotensin I
- 3: Substance P
- 4: Renin Substrate
- 5: Insulin Chain B
- 6: Melittin



[EXPLORE HAMILTON HPLC APPLICATION INDEX](#)



## About Hamilton

Hamilton Company is a global manufacturer and supplier of world-class analytical components, medical instrumentation, temperature control systems, laboratory robotics and automated liquid handling equipment. For more than 35 years, Hamilton Company has developed and manufactured pressure-stable, polymeric polystyrene-divinylbenzene (PS-DVB) HPLC columns that are used in most of the world's top chromatography labs. With a wide range of particle sizes, pore sizes, pH stability from 1 to 14, temperature resistance over 100°C, and chemistries to match most analyte types, Hamilton polymeric columns are the chromatographer's choice for challenging separations.

## Hamilton's Here to Support You



### Product Support

We are available to assist your lab with method development, optimization, troubleshooting, and product recommendations.

[CONTACT SUPPORT](#)



### Customer Service and Order Support

Get assistance with order status, lead times, and shipping information.

[CUSTOMER SERVICE](#)

# HAMILTON®

**Web:** [www.hamiltoncompany.com](http://www.hamiltoncompany.com)

**USA:** 800-648-5950

**Europe:** +40-356-635-055

#### Hamilton Americas & Pacific Rim

Hamilton Company Inc.  
4970 Energy Way  
Reno, Nevada 89502 USA  
Tel: +1-775-858-3000  
Fax: +1-775-856-7259  
[sales@hamiltoncompany.com](mailto:sales@hamiltoncompany.com)

#### Hamilton Europe, Asia & Africa

Hamilton Central Europe S.R.L.  
str. Hamilton no. 2-4  
307210 Giarmata, Romania  
Tel: +40-356-635-055  
[contact.lab.ro@hamilton-ce.com](mailto:contact.lab.ro@hamilton-ce.com)

To find a representative in your area,  
please visit [hamiltoncompany.com/contacts](http://hamiltoncompany.com/contacts).