



# Synthesis of a Bradykinin Analog using AmphiSpheres™ Resins

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### Introduction

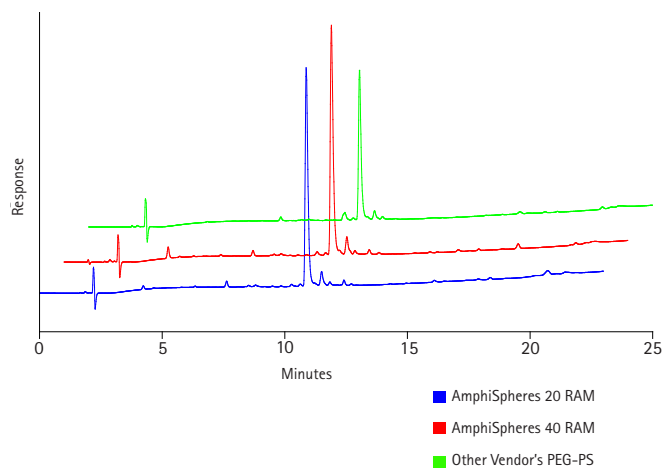
Bradykinin levels are increased as a result of the action of many ACE inhibitors, causing a reduction in blood pressure due to its role as a vasodilator. Synthesis of a C-terminal amide analog of bradykinin is accomplished by using AmphiSpheres resins. The analog is a nine amino acid peptide containing two arginine residues (prepared using Pbf side chain protection: H-Arg-Pro-Pro-Gly-Phe-Ser-Pro-Phe-Arg-NH<sub>2</sub>).

### Instrumentation and Conditions

Column: Varian Polaris 5 µm C18-A 150 x 4.6 mm (P/N A2000250X046)  
Gradient: 5 – 95% MeCN (0.1% TFA), 0 – 30 min  
Flow rate: 1 mL/min  
UV detector: 220 nm  
Injection volume: 20 µL

### Sample Preparation

The peptide was prepared using a peptide synthesizer on a 0.1 mmol scale using 10 fold excess Fmoc-AA-OH (with standard side chain protection as required) and coupling reagent (HBTU) for coupling reactions. Single 9 minute couplings were used throughout. Deprotection reactions (20% piperidine in DMF) were monitored by conductivity meter. Following peptide assembly and cleavage of the final Fmoc group on the synthesizer the peptide was cleaved from the resin by treating with TFA / TIPS / water 95:2.5:2.5 (v/v) for 2–3 h. Cleavage reagents were removed by rotary evaporation followed by trituration of the resultant solid with cold ether. The peptide was then lyophilized from water or water / acetic acid mix



### Results and Discussion

The figure shows the excellent yield of bradykinin analog from AmphiSpheres compared to PEG-PS from another vendor.

### Conclusions

AmphiSpheres 20 RAM and 40 RAM are very effective for the synthesis of bradykinin analogs. AmphiSpheres is a significant addition to the StratoSpheres product line from Varian, Inc. AmphiSpheres resins contain hydrophobic polystyrene and hydrophilic polyethyleneglycol components. This imparts a change in the swell characteristics of this amphipathic resin that can help improve synthesis of "difficult" peptide sequences.

*These data represent typical results.  
For further information, contact your local Varian Sales Office.*

