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Waters Application Notebook

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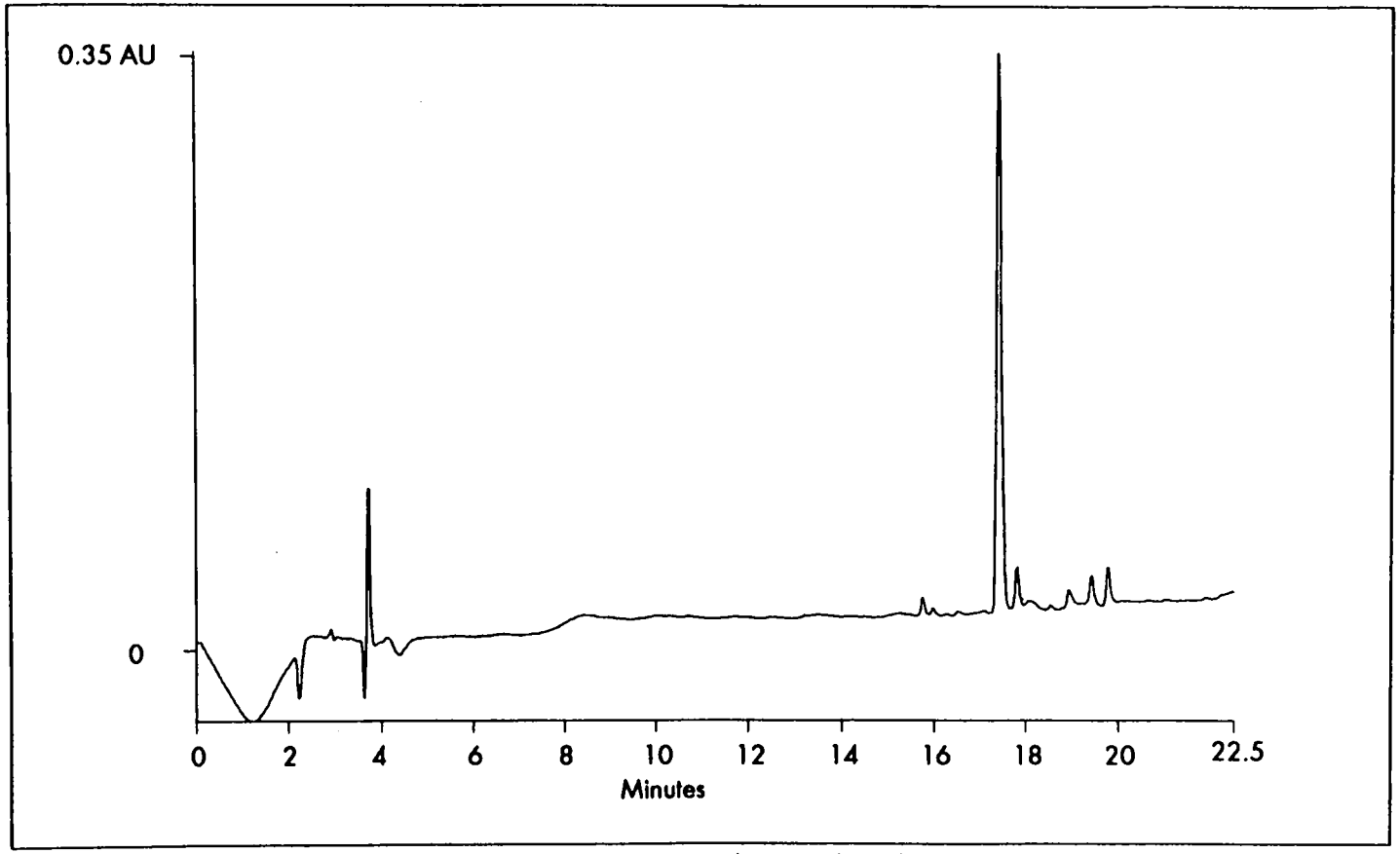
High Speed Peptide Synthesis Using PEG-PS™ Support



The use of the 9050 Peptide Synthesis System with an experimental support based on polyethylene-glycol bonded polystyrene allows for a dramatic reduction in cycle time with excellent product purity.

Conditions:

Columns: Delta-Pak™ HPI C_{18}, 5 µm, 300Å (two columns - 3.9 x 150 mm each)

Eluent A: 0.1% TFA in Water
Eluent B: 0.065% TFA in Acetonitrile

Gradient:

Time	%A	%B	Curve
Init.	93	7	*
40	53	47	6

Flow Rate: 0.75 ml/min.

Detection: 230nm (from PDA)

Injection: 50 µl (1mg/ml)

Objective:

To demonstrate the inherent ability of the model 9050 peptide synthesizer to perform very rapid synthesis of peptides when using PEG-PS support.

Details:

Synthetic method:
Sequence: NH2-ANKGFLEEV-COOH

Support: PEG-PS with PAL linker loaded to 2.4 meq/gm (0.8 gm)

Activation: Pfp active ester except for Fmoc-L-ASN (TMOB) which was by HBTU

Scale: 0.2 mmol with all AAs in a four fold excess

Cycle: 14 min cycle

Pre wash	6 sec
Deblock	90 sec
Wash	120 sec
Recycle	240 sec
Wash	90 sec

All flow rates 20 ml/min

Cleavage: One hour in 95% TFA 5% Triethylsilane, precipitated into dry ethyl ether.

System:

Synthesizer: Millipore model 9050 peptide synthesizer

HPLC: system consisted of a 712 WISP, 600 pump, 990 PDA detector, Powerline software, 860 Expert Ease Data System (signal via SIM)

References:

High Speed Continuous Flow Peptide Synthesis Using PEG-PS Support at Standard Scales C. Van Wandelen *et al.*, Poster presented at the Second "Perspectives in solid phase synthesis" meeting Canterbury 1991

Barany, F. Albericio, 'Peptides 1990' Proceedings from the 21st European Peptide Symposium, Giralt (Ed.) pp139, Escom