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Waters Alliance® System

Superior Reproducibility for Complex Gradients

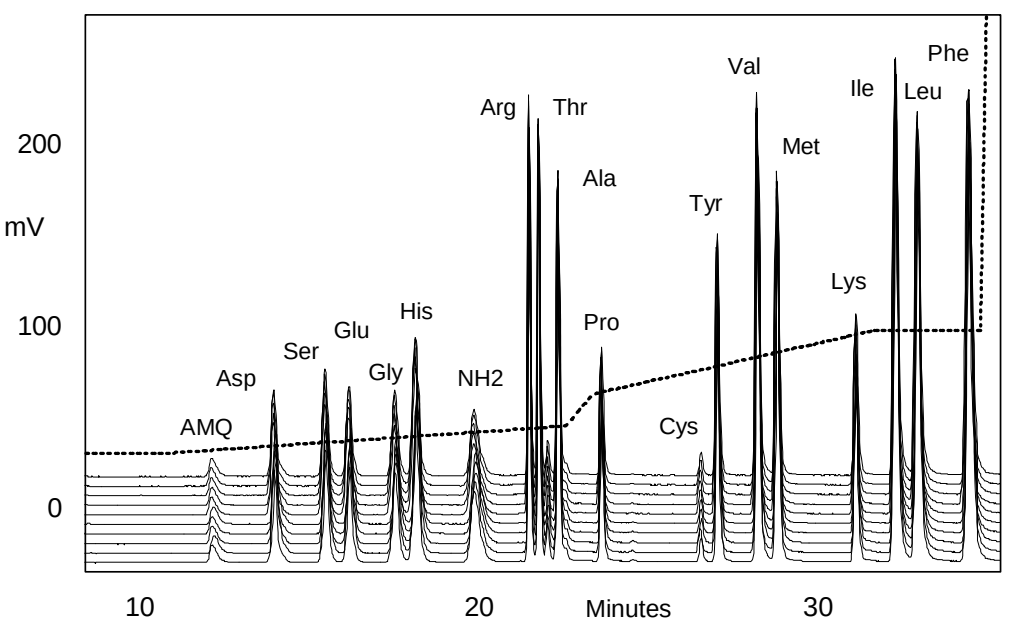
Performance PerSPECtives

Complex gradients are often required for difficult separations. The unique design and control software of the Waters Alliance Separations Module provides capabilities to accurately and reproducibly generate the most complex gradient profiles, such as the AccQ-Tag™ amino acid separation demonstrated below. Seventeen hydrolysate amino acids are separated with a five step gradient profile and the results show excellent reproducibility. Note that this performance is a clear improvement over any traditional HPLC systems. Standard deviations are reported in seconds.

Amino Acid	Std Dev (seconds)
AMQ	1.3
Asp	1.8
Ser	1.5
Glu	1.8
Gly	1.7
His	2.0
NH3	1.8
Arg	0.8
Thr	0.7
Ala	0.7
Pro	0.9
Cys	1.1
Tyr	1.0
Val	1.0
Met	1.0
Lys	0.8
Ile	0.8
Leu	0.9
Phe	1.3

Waters Alliance System consisting of:
Waters Alliance Separations Module
Waters 474 Scanning Fluorescence Detector with 5uL Flow Cell

Refer to AccQ-Tag brochure for eluent descriptions.
N=10



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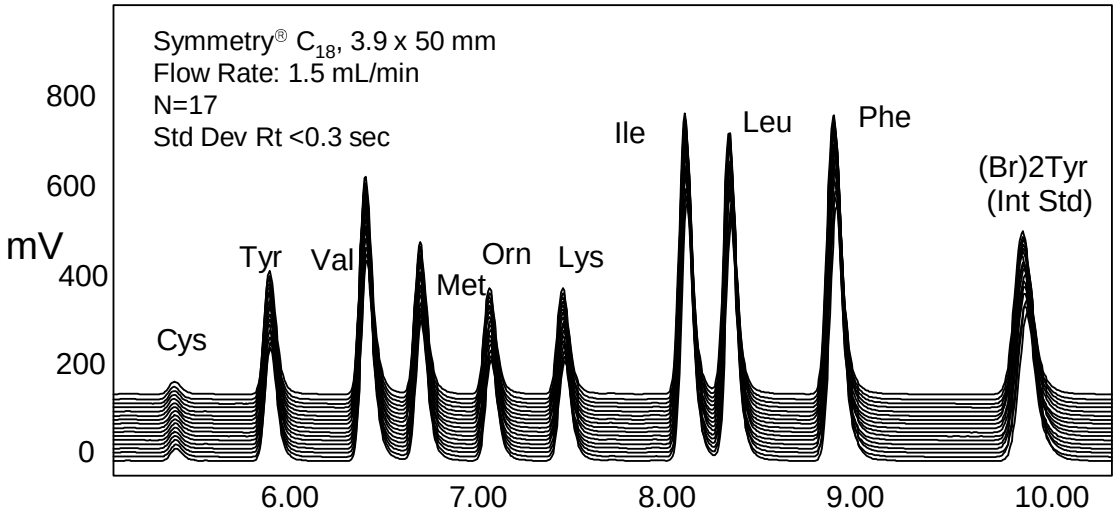
Waters

Fast Gradient Chromatography
Retention Time Reproducibility



Fast gradients often challenge an instrument's ability to deliver the rapid eluent changes necessary for a reproducible separation. The low volume, fast cycling time of the Waters Alliance Separations Module's gradient proportioning valve, coupled with advanced control software and efficient mixing provides capability for generating fast gradients. Several rapid gradient separations have been developed for the analysis of selected amino acids. In the top example the flow is increased to 1.5 mL/min, and the reproducibility remains excellent. The bottom example is a fast gradient developed to perform a three minute gradient at 4 mL/min. Both of these examples illustrate the superior gradient performance of the Waters Alliance Separations Module for all gradient profiles.