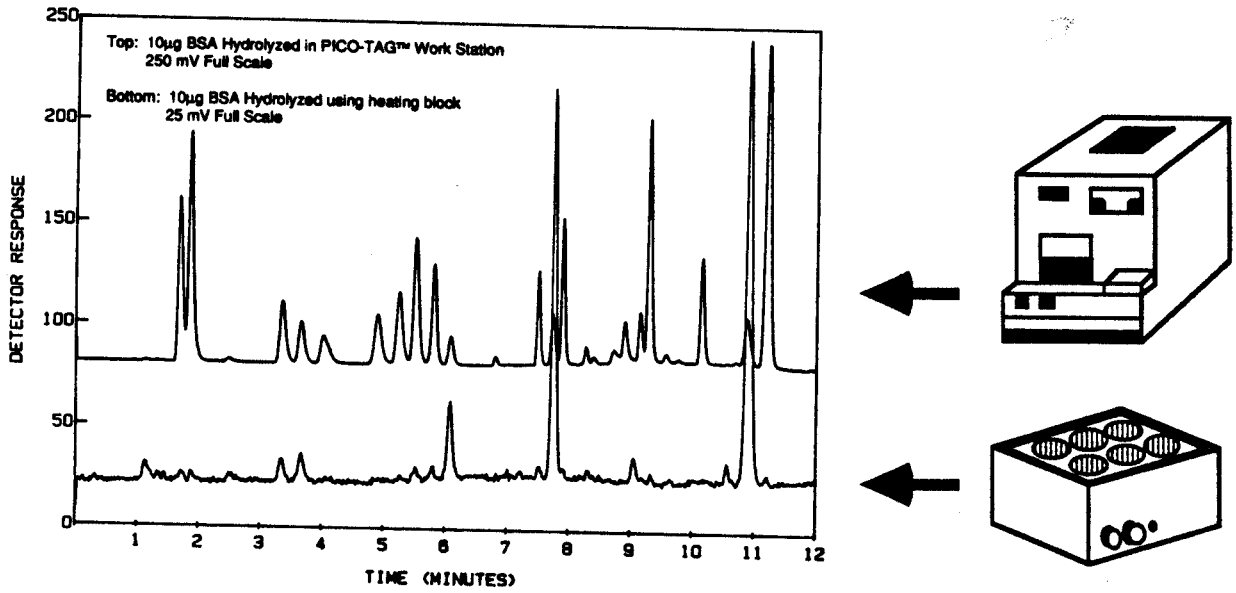
Waters
Lab Highlights
An Internal Communication of Applications and Techniques
LAH 0270 10/85
DP/LS/MD/AA/PH

USE OF PICO-TAG™ WORK STATION ASSURES RELIABLE HYDROLYSIS OF PROTEINS AND PEPTIDES

Determination of the amino acid composition of a protein or peptide requires hydrolysis of the peptide bonds, commonly with 6N HCl, to liberate the amino acids. This critical step is often taken for granted, but it can be a source of significant variation in the total amino acid analysis procedure, particularly when non-standard apparatus is used. The Waters PICO-TAG™ Work Station provides a convenient, standardized setup for reliable hydrolysis (as well as derivatization), and minimizes sample handling for reduced errors.

An extreme example of unreliable hydrolysis was recently encountered by a customer who attempted to use an open heating block (see figure) with the PICO-TAG™ vacuum vials. Because only the bottom half of the vial was enclosed by the block, the top remained cool and caused virtually all of the HCl to condense. The figure shows the results of hydrolysis of 10 µg bovine serum albumin for one hour at 150° C., using this setup versus the Work Station. Note that the lower chromatogram is at ten times greater sensitivity than the upper. The upper chromatogram shows the characteristic pattern expected for BSA; the lower trace shows principally background amino acids, present at < 10 pmoles.



MILLIPORE
Waters Chromatography Division
34 Maple St. / Milford, MA 01757 / 617-478-2000
Tom Tarvin