Effect of column temperature on separation of peptides and proteins

The effect of temperature on separation of peptides and proteins with a variety of molecular weight (MW) is estimated. The separations at 40°C and 70°C are compared.

By increasing column temperature to 70°C, selectivity change is observed, and peaks become sharper. Thus, improved resolution especially for larger molecules is obtained. Generally, larger molecules diffuse very slowly compared to small molecules. An elevated temperature can improve efficiency and peak shape by lowering mobile phase viscosity and improving mass transfer.

Temperature is a simple and effective tool to increase resolution in separations of proteins and peptides.

Improvement of resolution by increasing column temperature and coupling of 1.9 μm columns

23% more peaks can be resolved by increasing the column temperature to 70°C in the separation of tryptic digest of Hemoglobin.

The outstanding efficiency obtained by a coupling of two 100 mm length of Triart 1.9 μm columns reduces co-elution peaks and allows the precise separation in an analysis of complicated samples, such as peptide mapping.

Durability in pH 1 (1% TFA), 70°C

YMC-Triart C18, which offers excellent durability even under elevated temperature and low-pH conditions, is effective for the separation of peptides and proteins.