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Title (English)

Understanding chromatographic behaviour of glycosylated proteins

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Abstract

The chromatographic behaviour of glycosylated proteins was studied by separating protein/glycoprotein pairs on different chromatographic media. Two pairs were used: Ribonuclease A/ribonuclease B from bovine pancreas and deglycosylated avidin/native avidin from hen egg white. Avidin was successfully deglycosylated by α-mannosidase and endoglycosidase H treatment. Separation by cation chromatography at pH 4 resulted in an excellent separation of the two pairs. Cationic data were successfully predicted by cation exchange Quantitative Structure-Property Relationships (QSPR). The QSPR model predicted higher retention for non-glycosylated proteins than for glycoproteins. Separation by size exclusion chromatography showed that the apparent molecular weight difference by size exclusion chromatography is larger than the theoretical molecular weight difference.

Keywords

Glycoproteins, avidin, ribonuclease A, ribonuclease B, deglycosylation, chromatography, separation, Quantitative Structure-Property Relationships

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