Separation of Milk and Whey Protein on Macroporous Poly(Glycidyl Methacrylate-co-Ethylene Dimethacrylate) Monolithic Rods

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Continuous rods of macroporous poly(glycidyl methacrylate-co-ethylene dimethacrylate) were prepared by a free radical polymerization within the confines of a stainless-steel column (0.39× 150 mm). The preparation procedure consisted of two steps: preparation of an epoxy derivatized monolithic column and chemical modification of the epoxide groups with the diethylamine. The reaction of glycidyl methacrylate monoliths with diethylamine leads to an analog of the diethylaminoethyl (DEAE) chemistry. This monolithic DEAE weak anion exchanger is suitable for the large-scale separations of proteins. In this work, we investigated separations of milk and whey protein. Rapid separation of the protein was achieved at low back pressure simply with an increase in the flow rate or by using an steeper gradient.