

Chromatographic Separation of Caffeine and Tryptophan on Molded Monolithic Rods of Macroporous Poly(Glycidyl Methacrylate-co-Ethylene Glycol Dimethacrylate)

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The molded monolithic rods of macroporous poly(glycidyl methacrylate-co-ethylene glycol dimethacrylate) were polymerized in situ within a tubular mold, chromatographic column (4.6×100 mm) by a free radical polymerization. The epoxide groups of the rod were modified with reaction of sulphuric acid that affords two hydrophilic functional group, -OH, on the surface structures. By verifying the ratio of the monomer and porogen, the monolithic column could be provided not only macroporosity and high mechanic intensity, which is required for separation, but also a high content of epoxide groups. The prepared monolithic column has advantages of biopolymer separation, high column efficiency, low column back pressure, and good resolution for substances. The influences of polymerization compositions to the efficiency, selectivity and even the resolution of the macroporous monolithic column were investigated by the chromatographic separation of caffeine and tryptophan.