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High-Performance Liquid Chromatography of Antipyretics on Chemically Modified Porous Glass*

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There is an urgent need for new packing materials in order to achieve rapid chromatographic separation of pharmaceuticals and biomedical materials. To meet this demand, we prepared some chemically modified porous glass as the packing materials.

Porous Vycor glass with a pore size of 350 Å was treated with concentrated nitric acid, rinsed, and allowed to react with octadecylchlorosilane in boiling toluene for 3 h. Unreacted silanol groups in the modified glass were inactivated by the treatment with trimethylchlorosilane. The ODS glass with a particle size distribution of 10—15 μm was packed into a 150×4 mm I. D. stainless-steel column.

Five antipyretic drugs (aspirin, caffeine, guaiacol glycerol ether, 3-hydroxy-*p*-butyrophenetidine, and phenacetin) were separated in 2 min with a mobile phase of 20% acetonitrile at a flow-rate of 3.0 ml/min. A pharmaceutical preparation containing aspirin, phenacetin, caffeine, and chlorpheniramine maleate (Pulvis aspirini, phenacetini et coffeini compositus, standardized by the X th Japanese Pharmacopoeia) was analyzed in 2 min with a mobile phase of acetonitrile-water-acetic acid (20 : 79 : 1). The packing seems promissing for rapid analysis of pharmaceuticals and biomedical compounds.

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