Title	High-performance liquid chromatography of antipyretics on chemically modified porous glass
Sub Title	
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Publisher	共立薬科大学
Publication year	1985
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.30 (1985.),p.83- 83
JaLC DOI	
Abstract	
Notes	抄録
Genre	Technical Report
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000030-0083

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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 Xth Japanese Pharmacopoeia) was analyzed in 2 min with a mobile phase of acetonitrile–water–acetic acid (20 : 79 : 1). The packing seems promising for rapid analysis of pharmaceuticals and biomedical compounds.

* 本報告は *J. Chromatogr.*, **332**, 265 (1985) に発表

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