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[\[PDF \(765K\)\]](#) [\[References\]](#)**Mesoporous Platinum Electrodes for Amperometric Determination of Sugars with Anion Exchange Chromatography**[Jee Hoon HAN^{1\)}](#), [Han Nim CHOI^{1\)}](#), [Sejin PARK^{2\)}](#), [Taek Dong CHUNG^{3\)}](#) and [Won-Yong LEE^{1\)}](#)*1) Department of Chemistry, Yonsei University**2) Basic Science Research Institute, Sungshin Women's University**3) Department of Chemistry, Seoul National University***(Received May 3, 2010)****(Accepted June 21, 2010)**

A simple amperometric detection (AD) method based on mesoporous platinum (Pt) electrodes has been developed for the determination of sugars (glucose, fructose, and sucrose) with high-performance anion-exchange chromatography (HPAEC). The amperometric detection is based on the direct oxidation of sugars on mesoporous Pt films formed on a gold electrode. The mesoporous Pt electrode (roughness factor of 243) sensitively responded to glucose, fructose, and sucrose in 80 mM sodium hydroxide solution as an alkaline mobile-phase for HPAEC. Under the optimum conditions, the limits of detection ($S/N = 3$) in these sugars were 0.24, 0.29, and 1.8 mM, for glucose, fructose, and sucrose, respectively. The reproducibility (relative standard deviation) of the measurements was less than 3.5%. The present method was applied to the determination of sugars in apple juice. The recoveries for all sugars ranged from 97 to 99%.

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