Electrochemical Quantitative Detection of Glial Fibrillary Acidic Protein Based on Molecularly Imprinted Polymer Sensor

Tao Wang¹, Yuan Fang² and Zhongzheng He^{*}

¹ Department of Neurosurgery, The Central Hospital of Xian, Shanxi Province, Xian, 710004, China

² Department of Neurosurgery, The Third Hospital of Xian, Shanxi Province, Xian, 710018, China

*E-mail: hezhongzheng68@yeah.net

doi: 10.20964/2017.08.69

Received: 6 April 2017 / Accepted: 12 June 2017 / Published: 12 July 2017

This study synthesized a new glial fibrillary acidic protein (GFAP)-imprinted polymer based on the principle of biomimicking. A carbon electrode printed using an imprinted polymer-modified screen was constructed under ‘grafting-to’ modification for the detection of the GFAP. Then the atomic force microscopy and scanning electron microscopy assays were employed for the characterization of the decorated surface, with the limit of detection (LOD) of 0.04 µg/mL obtained under aqueous circumstance. The GFAP determination was further investigated in human blood serum to confirm the methodology and effect of the developed sensor.

Keywords: Glial fibrillary acidic protein; Molecularly imprinted polymer; Nervous system; Electrochemical determination; Human blood serum

[FULL TEXT](#)

© 2017 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).