Insight Medical Publishing

Nano Research & Applications

ISSN 2471-9838

2020

Vol.6 No.3

Flexible screen-printed electrodes using stone paper as a substrate for electrochemical detection of cancer biomarker

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Abstract

Flexible electrodes printed on stone paper (HP) and modified with gold nanoparticles (HP-AuNPs) and graphene (HP-Gr-AuNPs) were manufactured. Their electrochemical properties were studied by linear sweep voltammetry (LSV) and electrochemical impedance spectroscopy (EIS). The obtained results indicate the beneficial effect of AuNPs and graphene: a low charge transfer resistance and a high apparent heterogeneous electron transfer rate, compared to the unmodified electrode (HP). In addition, the modified electrodes showed increased sensitivity towards 8-OHdG, such as 5.90 mA/M (for HP-AuNPs) and 9.29 mA/M (for HP-Gr-AuNPs), in comparison with the unmodified HP electrode (2.52 mA/M).

Biography:

Codruta Mihaela Varodi is Senior Researcher III at INCDTIM Cluj-Napoca. She received her B.Sc. in Chemical-Physics, Babes-Bolyai University, Cluj-Napoca, Romania (1994-1998) and her Ph.D. in Chemistry at Babes-Bolyai University, Cluj-Napoca, Romania (2016).

She has published more than 25 papers in ISI journals. This work was supported by a grant of Ministry of Research and Innovation, CNCS-UEFISCDI, project number PN-III-P4-ID-PCCF-2016-0006, within PNCDI III and by Program Nucleu, no. PN 19 35 01 02/2019.