Electrochemical Sensing Platform for Glutamic Pyruvic Transaminase Determination

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The activity of glutamic pyruvic transaminase (GPT) is a clinically significant factor for some acute diseases (e.g., acute hepatopathy and myocardial infarction), necessitating the fast and small format analysis of GPT at point-of-care. In the present study, a graphene–Nafion nanohybrid film coated sensor was used to detect GPT. A simple drop-casting method was used for the preparation of Nafion graphene oxide-decorated screen-printed electrode (SPE), while an electrochemical strategy was employed to reduce the graphene oxide on the SPE surface. Our proposed sensor can determine GPT over the range of 5–300 U/L, with the limit of detection (LOD) of 2.2 U/L.

Keywords: Electrochemical sensing; Glutamic pyruvic transaminase; Graphene; Liver disease; Clinic diagnosis

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