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Recent progress on the sensitive detection of cardiovascular disease markers by electrochemical-based biosensors

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Highlights

- Cardiovasculer disease biomarkers were defined.
- Electrochemical studies of cardiovasculer disease biomarkers were presented according to the recent literture survey.
- Electrochemical cardiac sensors and fabrication materials were given in details.

Abstract

Cardiovascular disease is the most reason for deaths in all over the world. Hence, biomarkers of cardiovascular diseases are very crucial for diagnosis and management process. Biomarker detection demand is opened the important way in biosensor development field. Rapid, cheap, portable, precise, selective and sensitive biomarker sensing devices are needed at this point to detect and predict disease. A cardiac biomarker can be orderable as C-reactive protein, troponin I or T, myoglobin, tumor necrosis factor alpha, interleukin-6, interleukin-1, lipoprotein-associated phospholipase, low-density lipoprotein and myeloperoxidase. They are used for prediction of cardiovascular diseases. There are many methods for early diagnosis of cardiovascular diseases, but these have long time process and expensive devices. In recent studies, different biosensors have been developed to remove the problems in this field. Electrochemical devices and developed biosensors have many superiorities than others such as low cost, mobile, reliable, repeatable, need a little amount of solution. In this review, recent