عنوان مقاله:

Different Electrochemical Sensors for Determination of Dopamine as Neurotransmitter in Mixed and Clinical Samples: A Review

محل انتشار:

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خلاصه مقاله:

Dopamine (DA) is one of the most important catecholamine neurotransmitters in the human central nervous system in the brain and plays a key role in the functioning of the renal, hormonal, and cardiovascular systems. Abnormal levels of dopamine are related to neurological disorders, such as schizophrenia and Parkinson’s disease and the control and fluctuations of the amount of dopamine are extremely important in monitoring with analytical systems in the human brain. This review covers the different electrochemical sensors for the determination of dopamine as neurotransmitter and points out the advantages and disadvantages of them. The interaction between the functional groups of the sensor’s material and the analyte molecule is discussed, as it is essential for the analytical characteristics obtained. The analytical performances of the voltammetric or amperometric chemical and biochemical sensors (linear range of analytical response, sensitivity etc) are highlightened. The numerous applications of DA electrochemical sensors in fields like pharmaceutical or clinical analysis, where DA represents a key analyte, are also presented.

کلمات کلیدی:

Dopamine, Modified electrodes, Electrochemical detection, Neurotransmitters