Insights: Publications

Breath biosensing: using electrochemical enzymatic sensors for detection of biomarkers in human breath

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Detection of biomarkers for disease by noninvasive methods is critical for the early diagnosis and screening of disease, enabling prompt treatment. Breath biosensors are a viable option as the exhaled breath contains several biomarkers linked to lung cancer, oxidative stress, diabetes, and other diseases. Breath analysis has been achieved by advanced analytical techniques such as gas chromatography and infrared spectroscopy. However, electrochemical enzymatic breath biosensors offer a cost-effective, sensitive platform for biomarker detection without complex analysis and interpretation by trained laboratory personnel. This review aims to summarize recent advances in the field of electrochemical enzymatic breath biosensors and offer future opportunities from other applications of nonelectrochemical enzymatic breath biosensors.