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The Smartphone biosensors for point-of-care detection of human infectious diseases

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The accurate and fast diagnosis of infectious diseases play a critical role in the timely and tailored treatment of the patients and preventing the infections from the spread. This is especially necessary in areas with low- and middle-income of the world. According to the smartphone-based sensory applications such as the inimitable ability to obtain portable, user-friendly, accurate, and effective functions, that in turn, converts lab-on-hardware an interesting area of new investigations. In the present review, original research articles published in English were collected from various databases during January 2011-July 2021. Also, the reference lists of the articles have been searched. In between 121 electronically searched citations, 35 articles had the inclusion criteria. The maximum potential and extended utilization of smartphone-based biosensors in the diagnosis of human infectious agents belonged to colorimetric smartphone biosensors. Also, because of their unique futures in easy visualization, comfortable analyzing and processing by smartphone, they are easier to use for point-of-care products. Based on the results, smartphone-based biosensors are rapid, precise, and low-cost diagnostic methods, and increasing their quality in limited-resource settings is of major importance. In addition, their abilities to connect to the “cloud” data storage systems and the Internet of Things (IoT) networks for collecting and sharing medical analytical data provide a trending novel research field in medical information technology.

Biography

Dr. Kobra Salimiyan rizi received the B.S. degree in Microbiology from Isfahan University (2007-2011) and the M.S. degree in medical microbiology from Tarbiat Modares University, Tehran, Iran (2011 – 2014) and her PhD degree in medical bacteriology from Mashhad University of Medical Sciences, Mashhad, Iran (2016-2021). Her research interest includes the bacterial infectious disease, Laboratory Identification of Bacteria, TB biosensors, point-of-care technologies, analytical chemistry, and biosensors for the detection of bacteria.

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