عنوان مقاله:

Colorimetric Nanosensor For Detection of Corona Virus

محل انتشار:

دهمین سمینارملی شیمی و محیط زیست ایران (سال: 1400)

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خلاصه مقاله:

The new coronavirus (SARS-CoV-۲) outbreak was recognized in December ۲۰۱۹ andit has caused the death of many people [۱]. As of ۵th August ۲۰۲۱, approximately ۲۰۰ millionCOVID-۱۹ confirmed cases worldwide have been reported, resulting in the death of ۴.۲۶ millionpeople [۲]. Due to the prevalence of the disease caused by this virus, it is necessary for rapid andefficient diagnostic methods to identifying coronavirus in humans. Currently, the only availableway to diagnose SARS-CoV-۲ is the Real Time - polymer chain reactions (RT-PCR) method,which can detect virus genetic material (RNA) in samples collected from the patient's oropharynxand nasopharynx. but, it is considered a time-consuming, high cost, and expert manpower method. Over the past decades, nanomaterials, including nanosensors, have always emerged as one of themost promising options for innovation in traditional analysis methods [۳]. Nanomaterial such asgold nanoparticles (AuNPs) and silver nanoparticles (AgNPs) have plasmon resonance propertieswhich are giving new opportunities for colorimetric sensors [۴]. In this study, a nanosensor basedon graphene/gold nanoparticles kit has been developed and this nano-kit provides the ability todetect SARS-Cov-۲ through oral in ۶ to ۸ minutes. Compared to existing methods such as RTPCR,colorimetric assay by nano-kit has a faster detection time, lower cost, no need for an experttechnician. In this method, after sampling the patient's oral, an oral-soaked swab is placed in thevirus culture medium. The oral sample is combined with the sensor and in the presence of thevirus, the color changes occur. The results of this procedure .can be seen by the naked eye bychanging the color from light red to dark purple

کلمات کلیدی:

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