

CRISPR Dependent Method for SARS-Cov-22 Diagnosis and Treatment

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Abstract

The COVID-19 has currently become a Public Health Emergency of International Concern. Presently just one diagnostic assay i.e qPCR check is on the market to notice the COVID-19 and no treatment methodology is on the market thus CRISPR/cas9 technology is one among the promising space to notice and treat this sickness.

Keywords: *Nanoparticles; Synthesis of silver nanoparticles; Chemical method.*

Introduction

The Novel Coronavirus sickness two019 (COVID-19) that is additionally called severe acute metastasis syndrome Coronavirus 2 (SARS-Cov-2), has currently become a Public Health Emergency of International Concern. In December, the primary case of COVID-19 was found in china at that time it transmitted everywhere the globe terribly apace and infects the big population and has emerged as a severe epidemic that causes severe metastasis syndrome in humans [1]. To date, there's just one diagnostic assay i.e. qPCR check to notice the COVID-19, however inadequate chemical agent kits and instrumentation have over-involved the sickness detection. thus there's associate pressing have to be compelled to develop another detection and hindrance methodology to manage the severe infectious disease worldwide. Researchers at Howard Hughes Medical Institute, Cambridge and McGovern Institute for Brain analysis at Massachusetts Institute of Technology, USA developed a replacement CRISPR base protocol called CRISPR-based private detective (Specific High Sensitivity accelerator newsman UnLOCKing) technique for the detection of COVID-19 which needs but associate hour [2]. thus CRISPR/cas9 technology is one among the promising areas to treat this sickness.

Recently the new CRISPR/cas9 technology has wide used for order piece of writing to cure several diseases like retinal disorder, monogenic disease, cancer therapy, carcinoma metastasis, and plenty of different diseases. CRISPR (clustered often interspaced short palindromic repeat) is a component of the microorganism order system, that makes the microorganism cells proof against the virus. The CRISPR was 1st determined in Escherichia coli [3] associated function an adaptative system in microorganism against bacteriophages [4]. The clustered often interspaced short palindromic repeat-associated enzyme Cas9 (CRISPR-Cas9) created DNA Double-Strand Breaks (DSBs) at specific sites within the order by targeted recognition and cleavage.

CRISPR systems, found in ninetieth of archaeal and four-hundredth of microorganism genomes area unit extremely various, with
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variation in PAM sequences and also the range and sort of Cas proteins [5]. The CRISPR system has 3 forms of mechanisms i.e Type I, Type II, and III. In type I, and sort III CRISPR, numerous forms of Cas proteins participate within the recognition and destruction of the target. However, within the sort II CRISPR-Cas9 system an occasional range of Cas proteins area unit concerned, thus thereby engineering of sort II CRISPR system a lot of easier [6]. There area unit 2 main elements in CRISPR/cas9 technology one is cas9 protein and guide RNA (gRNA). The gRNA acknowledges the target web {site}} and also the cas9 protein cut the target site and causes insertion or deletion within the target site of the factor [5]. There area unit numerous on-line tools like CRISPOR and CHOPCHOP which might be used for planning of gRNA.

The main issue to treat Coronavirus sickness by CRISPR/cas9 is that COVID-19 could be a positive-strand RNA virus and target website of cas9 protein is DNA thus to beat this drawback researchers at the big apple order Center and big apple University have developed a replacement form of CRISPR screen technology that target the RNA and this CRISPR protein is thought as Cas13 that target the RNA rather than DNA [7,8]. The Cas13 protein is sort VI CRISPR (clustered often interspaced short palindromic repeats) enzymes that have new been recognized as programmable RNA-guided. thus CRISPR-based screening could offer a chance to spot and cure the COVID-19 shortly [9,10].

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