

CRISPR-based detection of SARS-CoV-2

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The gold-standard diagnostic technique for SARS-CoV-2 infection is based on polymerase chain reaction (PCR). However, this pandemic has highlighted the need for alternative methods that do not require precise equipment and can be closer to the patient. In this regard, CRISPR-Cas systems have emerged as suitable tools for the detection of SARS-CoV-2 genomic RNA [1,2]. In this flash presentation, we will provide an overview of our current research on this topic and what we propose to go beyond the state-of-the-art. In particular, we are exploiting the CRISPR-Cas13 system to detect virus-derived RNAs, coupling the CRISPR-Cas12 system with nanostructured materials, and developing a novel system based on CRISPR-Cas9 for multiplexed virus detection.

REFERENCES

- [1] Broughton, J.P., *et al.* (2020) CRISPR-Cas12-based detection of SARS-CoV-2. *Nat. Biotechnol.* 38, 870-874.
- [2] Joung, J., *et al.* (2020) Detection of SARS-CoV-2 with SHERLOCK one-pot testing. *N. Engl. J. Med.* 383, 1492-1494.