

CRISPRdetect – multiplexed RNA detection with reprogrammed tracrRNAs

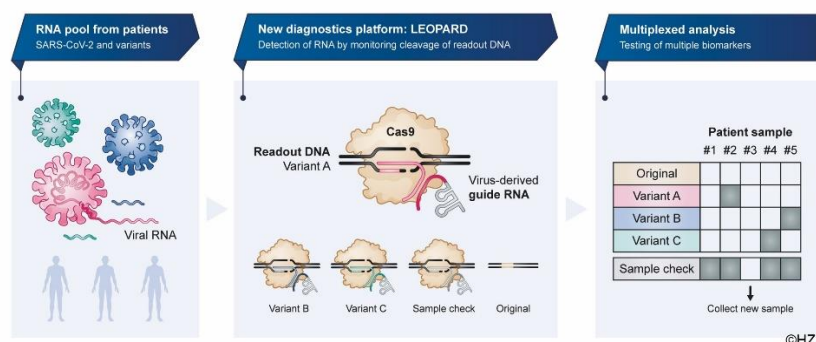
Keywords: CRISPR-Cas, RNA detection, diagnostics, multiplexing, point-of-care (POC)

INVENTION NOVELTY

We present a scalable RNA detection platform that enables numerous applications for multiplexed diagnostics in clinical testing facilities and point-of-care (POC) testing.

VALUE PROPOSITION

Diagnostic tests are crucial for gathering information about a person's health, but many only provide limited insights, affecting decision-making in patient care. LEOPARD, our first-in-class technology platform, allows the collection of large amounts of data with a single test. Built on a novel CRISPR discovery, LEOPARD detects numerous RNA transcripts in parallel. It offers fast, multiplexed readouts with simple machinery, surpassing traditional methods like multiplexed PCR, next-generation sequencing, and mass spectrometry. Additionally, LEOPARD enables rapid point-of-care testing, providing the first multiplexed devices suitable for use outside clinical settings.



TECHNOLOGY DESCRIPTION

LEOPARD is based on a new discovery in CRISPR biology, where engineered tracrRNAs hybridize with biomarker RNA to create a guide RNA that directs sequence-specific DNA cutting via Cas9 nuclease. This technology enables fast and multiplexed RNA detection with simple, accessible machinery, making it a strong alternative to existing methods. It also shows great potential for point-of-care applications, providing rapid, multiplexed testing outside of traditional clinical environments.

COMMERCIAL OPPORTUNITY

The technology is offered for co-development and/or licensing.

DEVELOPMENT STATUS

Current efforts focus on the development of a multiplexed detection systems based on microarrays and lateral flow strips.

PATENT SITUATION

European priority filed Feb 2020; PCT WO2021170877 nationalized in AU, CA, CN, EP, IL, JP, KR, SG and US.

FURTHER READING

Jiao et al. 2021. Science 372, 941–948