Title: FnCas9 based low-cost CRISPR diagnostics for rapid detection of monogenic and infectious diseases.

Single nucleotide target precision of CRISPR/Cas systems has recently been staged for a sequencing-free approach for variant detection. An orthogonal Francisella novicida Cas9 or FnCas9, which we had extensively characterized in our lab, can possess a similar ability to discriminate single nucleotide changes along with the DNA sequences. Employing which through a fine-tuned guide-RNA design, we tried and commercialized a FnCas9 based low-cost and rapid SARS-CoV-2 detection assay (FELUDA). Which is again improved as RAY (Rapid variant AssaY) for a highly robust and visual diagnosis of monogenic and infectious diseases.

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