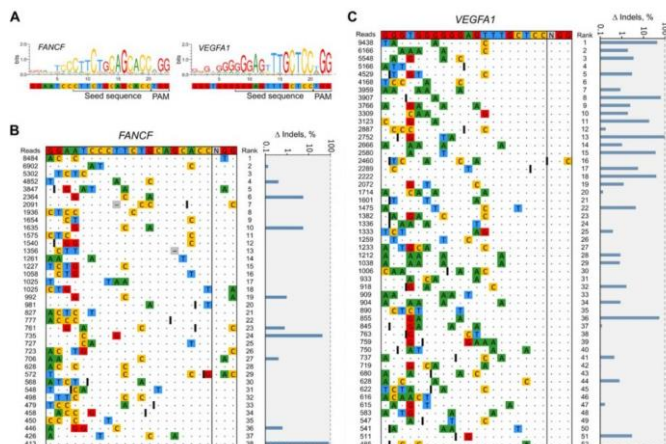


CRISPR nuclease off-target detection by sequencing (CROFT-Seq)

BRIEF DESCRIPTION OF A TECHNOLOGY

CROFT-Seq (CRISPR nuclease off-target detection by sequencing) is a **sensitive**, **rapid**, and **cost-effective** assay for the genome-wide detection of CRISPR-Cas9 off-target sites *in vitro*.



PURPOSE

CROFT-Seq performs comparably in terms of specificity and sensitivity to the most commonly used SITE-Seq and CIRCLE-Seq methods; however, it is ~8-fold more cost-efficient and ~4-fold faster. Moreover, due to its unique reaction compositions and conditions, CROFT-Seq is suitable for performing the whole protocol in a single reaction tube, thus allowing for simple automation using liquid handling robots.

FIELDS OF APPLICATION

CROFT-Seq could be adapted for the off-target detection of other emerging genome editing tools, such as Cas12, TnpB, and base editors (under development).

TECHNOLOGY READINESS LEVEL

Validated in lab.

INTELLECTUAL PROPERTY

EP patent application EP4471159B1

US patent application US2024401126A1

JP patent application JP2024172618A

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PUBLICATIONS

Toliušis et al. (2025) *bioRxiv*,
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