

ONE-SEQ OFF-TARGET EDITING ANALYSIS

PRODUCT OVERVIEW

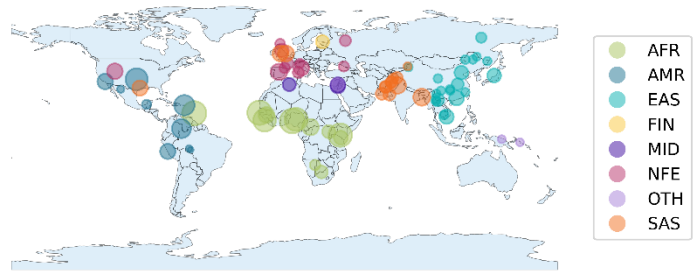
SeQure Dx provides off-target editing analysis designed to support many stages of the discovery and pre-clinical therapy development pipeline. Use cases include: guide selection, donor selection, and IND-enabling studies. Already used in the approval of multiple gene editing therapies, ONE-seq is the new gold standard off-target editing (OTE) assay. Addressing the FDA’s guidance, ONE-seq is a highly sensitive assay, which leverages the genomic information of the 1000 genomes project and the HGDP to provide population-scale variant assessment. Compatible with broad range of editors, our ONE-seq assay features multiple replicates, and measures real biochemical *in vitro* cleavage (IVC) across a range of conditions to ensure that a complete picture of editing is captured.

All off-target edits assessed by the ONE-seq assay receive editing frequency scoring (normalized to the on-target) *and* functional annotation scoring. With over half a dozen categories including: genomic location, variant effect prediction for 2-base deletion, gene constraint, gene expression impact, cancer genes, and disease genes, you can confidently determine the potential impact of any given edit.



Above: Count of candidate off-target sites assessed in the ONE-seq assay, colored by source.

Left: Edits of Relative Concern (ERC) tier table, featuring frequency of editing of candidate off-targets on the Y-axis, and aggregate annotation scoring on the x-axis.



Above: Map indicating representation of population genomic heterogeneity and population sizes included in the ONE-seq assay.

WHAT'S INCLUDED

- Library enumeration
- Synthetic oligo pool procurement
- Library preparation and in-vitro cleavage
 - 3 IVC ratios, all in triplicate
- Sequencing data generation
- Off-target nomination and editing frequency scoring
- Annotation and scoring
- Summary files and report generation

INPUT REQUIREMENTS

- Guide sequence
- PAM sequence

Optional

- Guide RNA :
 - ≥ 0.1 nmol (lyophilized) or $\geq 10 \mu\text{L}$ @ $\geq 10 \mu\text{M}$ (resuspended) per guide
- CAS9/CAS12a Nuclease :
 - $\geq 22 \mu\text{L}$ @ $\geq 1 \mu\text{M}$ per guide

DATA REPORTING DELIVERABLE

- ONE-seq Nomination Report
 - Executive Summary
 - Intermediate QC and Sequencing Metrics
 - Gene Expression Figures
 - Scored, Annotated and Tiered OTE TSV