

Alt-R® S.p. HiFi Cas9 Nuclease 3NLS

Highly specific genome editing, even under challenging conditions

Alt-R S.p. HiFi Cas9 Nuclease 3NLS is a high-fidelity *S. pyogenes* Cas9 protein that significantly reduces off-target effects without compromising performance—perfect for routine experiments and ideal for challenging genome editing applications.

The Alt-R S.p. HiFi Cas9 enzyme easily replaces wild-type Cas9 in existing applications, with no need for protocol changes. The enzyme is compatible with other components of the Alt-R CRISPR-Cas9 System to enable precise genome editing through the same advantageous ribonucleoprotein (RNP)-based workflow.

benefits

Achieve increased specificity with strongly reduced off-target activity

Obtain similar high efficiency to the market-leading Alt-R S.p. Cas9 Nuclease 3NLS

Deliver the ribonucleoprotein efficiently by lipofection, electroporation, or microinjection

Avoid the toxicity and innate immune response activation commonly observed with *in vitro* transcribed Cas9 mRNA and sgRNAs

Discover more at
www.idtdna.com/CRISPR-Cas9

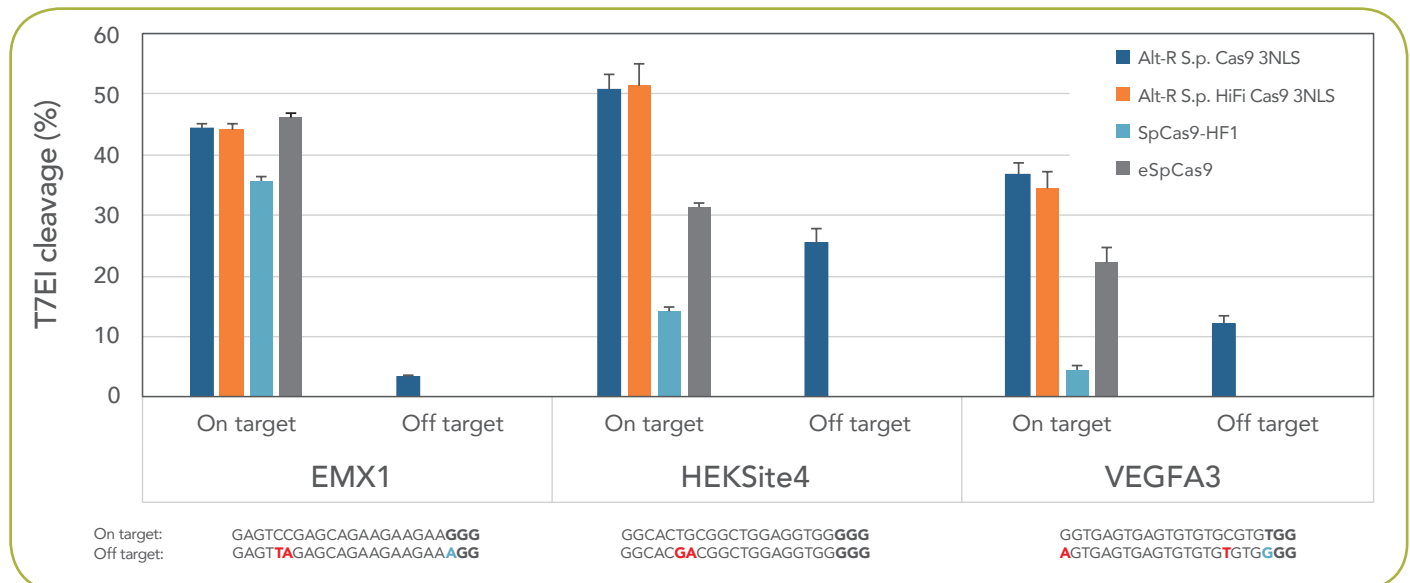


Figure 1. Alt-R S.p. HiFi Cas9 Nuclease 3NLS provides consistently high on-target performance, while reducing off-target editing, when delivered as a ribonucleoprotein (RNP). RNP complexes (1 μ M) were formed with wild-type Cas9 protein (Alt-R S.p. Cas9 Nuclease 3NLS; dark blue) and 3 high-fidelity Cas9 variants, Alt-R HiFi Cas9 (orange), SpCas9-HF1 (light blue; Kleinstiver et al., *Nature* 529:490–495), or eSpCas9 (gray; Slaymaker et al., *Science* 351:84–88), combined with an Alt-R crRNA:tracrRNA gRNA complex targeting the *EMX1*, *HEKSite4*, or *VEGFA3* loci. Complexes (10 nM) were delivered into HEK-293 cells by reverse transfection using Lipofectamine® RNAiMAX Transfection Reagent (Thermo Fisher), and DNA was extracted after 48 hr. Editing was measured by PCR amplification of the indicated on- and off-target sites, followed by cleavage with T7EI and analysis using the Fragment Analyzer™ system (Advanced Analytical). Error bars represent the standard errors of the means. The sequence of the on- and off-target sites for each crRNA are indicated at the bottom (red = mismatch in protospacer; blue = mismatch in PAM site).

Ordering information

CRISPR guide RNAs

Product	Size	Catalog #
Alt-R CRISPR-Cas9 crRNA	2, 10 nmol tubes or plates	Order at www.idtdna.com/CRISPR-Cas9
	5 nmol	1072532
Alt-R CRISPR-Cas9 tracrRNA	20 nmol	1072533
	100 nmol	1072534

HiFi Cas9 Nuclease

Product	Size	Catalog #
Alt-R S.p. HiFi Cas9 Nuclease	100 µg	1078727
	500 µg	1078728

Control kits*

Product	Catalog #
Alt-R CRISPR-Cas9 Control Kit, Human (2 nmol)	1072554
Alt-R CRISPR-Cas9 Control Kit, Mouse (2 nmol)	1072555
Alt-R CRISPR-Cas9 Control Kit, Rat (2 nmol)	1072556

* Control kit components are also available individually.

Control kit components

- Alt-R CRISPR HPRT Positive Control crRNA
- Alt-R CRISPR Negative Control crRNA #1
- Alt-R CRISPR-Cas9 tracrRNA
- Alt-R HPRT PCR Primer Mix
- Nuclease-Free Duplexing Buffer

www.idtdna.com/CRISPR-Cas9

For Research Use Only. Not for use in diagnostic procedures.

© 2017 Integrated DNA Technologies, Inc. All rights reserved. Trademarks contained herein are the property of Integrated DNA Technologies, Inc. or their respective owners. For specific trademark and licensing information, see www.idtdna.com/trademarks. CRS-10083-FL 08/17

