

STREAMLINE YOUR CRISPR GENOME EDITING WORKFLOW WITH IDT ALDEVRON™ NUCLEASE SOLUTIONS

A single-vendor solution to help you smoothly transition from concept to clinic



Same product at RUO
or full GMP grade



High editing efficiency,
reduced off-target effect



Quality documentation
enabling regulatory filing

ACCELERATE YOUR PATH TO CLINIC

The IDT and Aldevron™ partnership provides a one-vendor strategy for moving gene editing from preclinical research to clinical solutions. Engineered for use in a variety of applications including electroporation, transfection, and microinjection, Aldevron nucleases are available at both research and GMP quality grades.

BENEFITS

1. Aldevron-manufactured nucleases are available from research through clinical applications.
2. *SpyFi*™ Cas9 Nuclease displays reduced off-target effects without loss of on-target activity.
3. Eureka-V™ Nuclease is a type V nuclease based on the Inscripta® novel MAD7® protein that targets a T-rich PAM domain and creates a staggered double-strand break at the target locus (currently available for research use only).

REDUCED OFF-TARGET EFFECT

SpyFi Cas9 ribonucleoprotein (RNP) complex exhibits reduced off-target effects by up to 94% compared to the wild type (SpCas9) RNP complex.

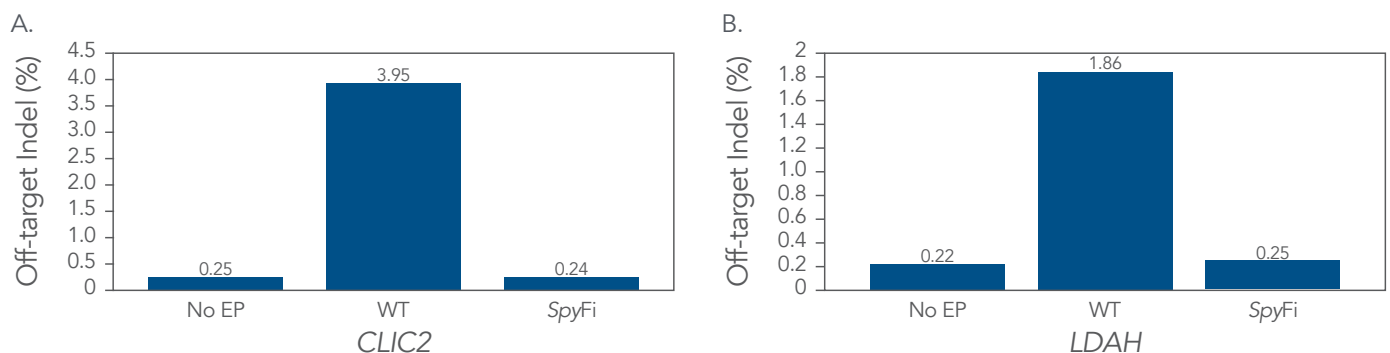


Figure 1. Fewer off-target events with *SpyFi* vs WT RNP. SpCas9 or *SpyFi* Cas9 RNP targeting the *TRAC* locus was transfected into activated human T cells using Maxcyte electroporation (EP) technology. The frequency of off-target editing for each RNP was determined by measuring indel percentages at four off-target binding sites previously identified by iGUIDE [1]. DNA flanking off-target binding sites in *CLIC2*, *LDAH*, *ANKS1B*, and *ADCY10* were amplified by PCR, gel-purified, and sequenced by next generation sequencing (NGS). **(A)** At the *CLIC2* locus *SpyFi* RNP reduced off target editing by 94% compared to WT RNP. **(B)** Similarly, at the *LDAH* locus there was an 87% reduction in off-target editing. At both these loci *SpyFi* had off-target effects comparable to no electroporation controls. At two other sites (*ANKS1B* and *ADCY10*), off-target editing was generally less frequent but was diminished by *SpyFi* (33% less at *ANKS1B* locus, 15% less at *ADCY10*, data not shown), $n = 1$.

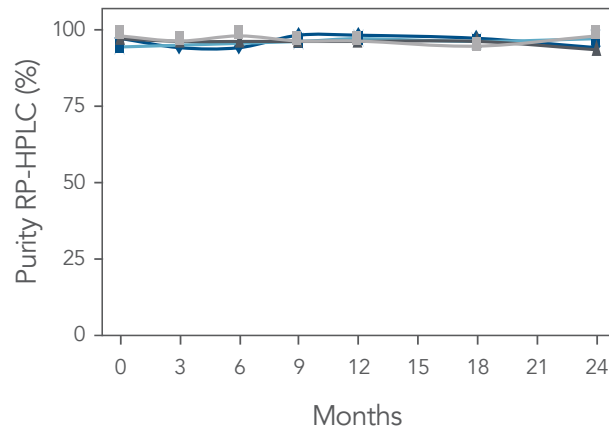
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CONSISTENT AND RELIABLE MANUFACTURING

Aldevron's high-quality manufacturing processes provide researchers with consistent and reliable SpCas9 enzymes, helping to enable their next breakthrough. Aldevron CRISPR Nucleases produced under controlled processes demonstrate lot-to-lot consistency and performance stability over time providing researchers with access to the same, reliable enzymes for their gene editing applications from initial discovery to commercialization.

A. GMP CRISPR reagents—Purity



B. GMP CRISPR reagents—*In vitro* activity

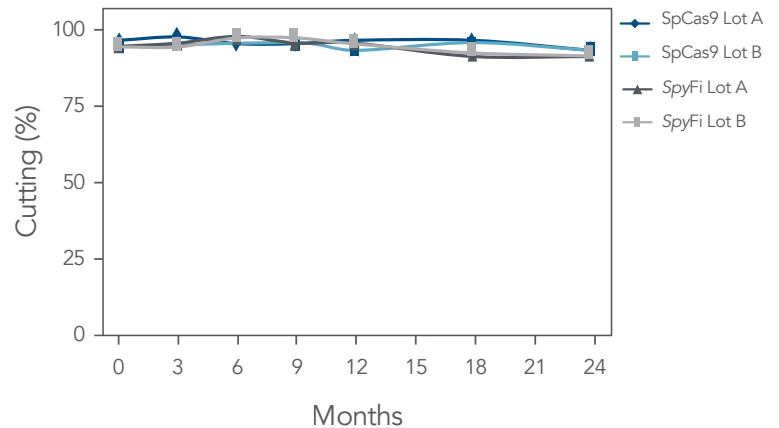


Figure 2. Long-term stability studies demonstrate lot-to-lot consistency and performance over time. (A) Quality tests show no loss of purity or (B) protein activity when the Nuclease is stored under recommended conditions. Data depicts two representative lots each of GMP SpCas9 Nuclease and SpyFi Cas9 Nuclease. Aldevron CRISPR Nucleases are stable for 24 months at -20°C . SpCas9 and SpyFi Cas9 Nuclease are formulated at 10.0 mg/mL in 25 mM Tris, 0.3 M NaCl, 0.1 mM EDTA, 50% glycerol, pH 7.4, $n = 2$.

REFERENCES

1. Stadtmayer EA, Fraietta JA, Davis MM, et al. CRISPR-engineered T cells in patients with refractory cancer. *Science*. 2020;367(6481).

ORDERING INFORMATION

Cas protein	Size	Catalog #
sNLS-SpCas9-sNLS Nuclease	0.25 or 0.5 mg	10017687, 10017688
SpyFi Cas9 Nuclease	0.25 or 0.5 mg	10017689, 10017690
Eureca-V Nuclease	1 or 5 mg	10017800, 10017811

> For more information, visit www.idtdna.com/AldevronCRISPRNucleases

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