Alt-R™ CRISPR-Cas9 sgRNAs

Chemically synthesized and modified single guide RNAs for outstanding CRISPR performance and quality

sgRNAs in days, not weeks, with fast synthesis time (3–5 business days*)

Guaranteed function with predesigned sgRNAs

Custom features to meet your needs, such as a variety of deliverable sizes, chemical modifications, and purification

Trusted quality and manufacturing, delivering optimized synthesis and purification to mitigate oligo cross contamination risk

* 3–5 business days for most standard requests. Custom requests may require additional manufacturing time.

Alt-R CRISPR-Cas9 single guide RNAs (sgRNAs) comprise both crRNA and tracrRNA sequences within a single molecule. High editing levels are observed at >95% of sites in Jurkat cells (**Figure 1**). Alt-R Cas9 sgRNAs are ideal for challenging conditions such as high nuclease environments or when co-delivered with Cas9 mRNA. They contain chemical modifications that provide increased stability, potency, and resistance against nuclease activity (**Figure 2**) [**1**].

Customizable sgRNAs to fit every project and every budget

Available in a wide range of deliverable yields, Alt-R Cas9 sgRNAs can be customized to suit small and large experiments. They are available in tube or plate format in a variety of scales from 2 nmol and up. Further options for custom chemical modifications, additional purification, and custom formulation provide flexibility to meet your experimental needs.

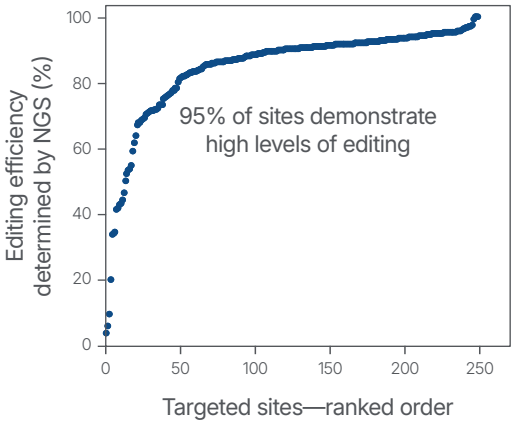

Figure 1. Alt-R CRISPR-Cas9 sgRNAs result in high editing rates in Jurkat cells. Ribonucleoprotein (RNP) complexes were formed with Alt-R S.p. WT Cas9 Nuclease V3, combined with Alt-R Cas9 sgRNAs synthesized for 255 randomly selected Cas9 guide RNA sites (*n* = 1 per site) across the human genome. RNP complexes (4 µM) were delivered into Jurkat cells (human T lymphocyte-derived cancer cells) via a Nucleofector™ system (Lonza) in the presence of Alt-R Cas9 Electroporation Enhancer. Genome editing efficiencies were determined by target amplification followed by next generation sequencing on an Illumina® instrument.

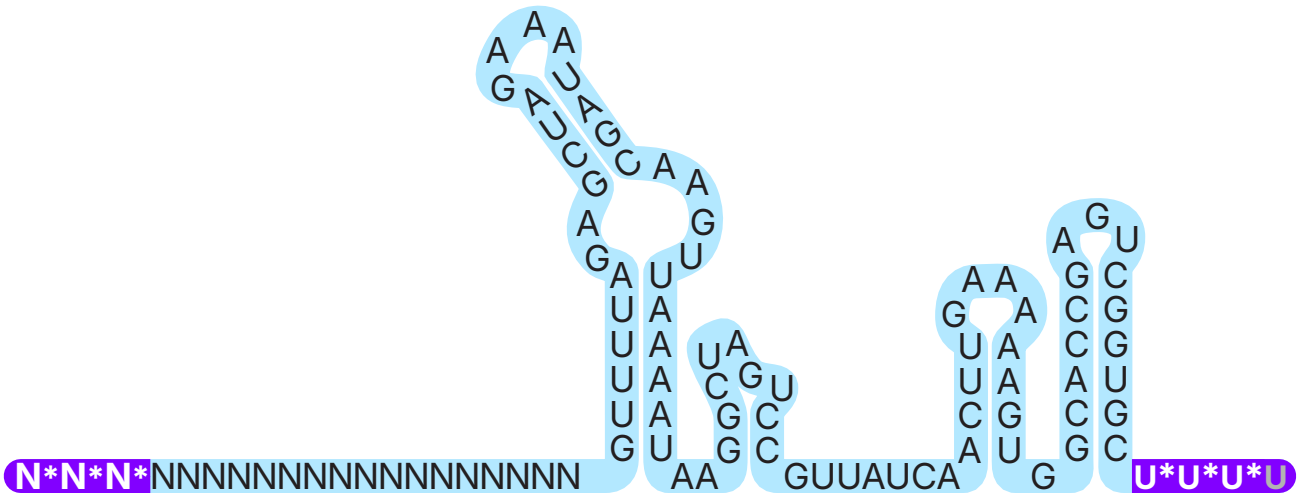

Figure 2. Alt-R CRISPR-Cas9 sgRNA structure diagram. Chemical modifications on Alt-R CRISPR-Cas9 sgRNAs increase their stability, potency, and resistance against nuclease activity. Nucleotides shown in bold white are 2'OMe bases, and the asterisks indicate phosphorothioate linkages.

PRIME editing guide RNA (pegRNA)

IDT now offers long pegRNAs (**Figure 3**) with purification, modification, and scale options. They can be ordered in tubes or plates, and most sequences are delivered in 3–5 business days. For more information, visit **go.idtdna.com/pegRNA**

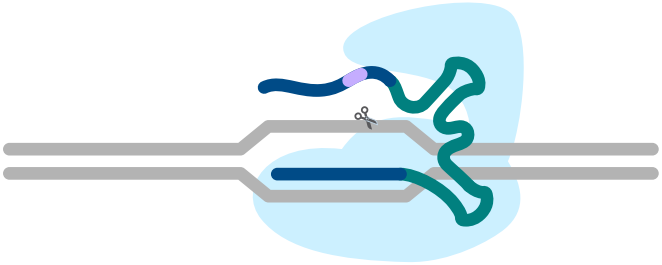

Figure 3. Schematic representation of pegRNA used for CRISPR prime editing. Prime editing uses a fusion protein of Cas9 H840A nickase and a reverse transcriptase (light blue), and a long guide RNA, called pegRNA. pegRNA is composed of targeting RNA (the lower dark blue), enzyme-binding region (green), and a region pairing to the cut strand of DNA (the upper dark blue). The orange region represents the new (edited) sequence.

Ordering information

Product	Size	How to order
Alt-R CRISPR-Cas9 sgRNA, in tubes or plates	2 nmol 10 nmol 50 nmol 100 nmol	Go to: **www.idtdna.com/CRISPR-Cas9**
	Larger scales available	Email: **CRISPR@idtdna.com**

References

1. Basila M, Kelley ML, Smith AVB. **Minimal 2'-O-methyl phosphorothioate linkage modification pattern of synthetic guide RNAs for increased stability and efficient CRISPR-Cas9 gene editing avoiding cellular toxicity**. PLoS One. 2017;12(11):e0188593. Published 2017 Nov 27.

For more information, visit **idtdna.com/CRISPR**