ArciTect™ sgRNA

Custom-designed single guide RNA for CRISPR-Cas9 genome editing

Catalog #200-0013 4 nmol

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Product Description

ArciTect™ sgRNA is a custom single guide RNA (sgRNA) for CRISPR-Cas9 genome editing. ArciTect™ sgRNA contains a user-specified 19- to 21-base sequence complementary to the target genomic location. ArciTect™ sgRNA must be designed directly upstream of a protospacer adjacent motif (PAM) site (5'-NGG-3'). It contains 2'-O-methyl and phosphorothioate modifications at the first two 5' and 3' terminal residues for optimal stability and editing efficiency.

Properties

Storage: Store at -80°C. Alternatively, store at -20°C for up to 6 months.
Shelf Life: Stable for 12 months from date of manufacture (MFG) on label.
Format: Lyophilized
Sequence: Refer to the STEMCELL Certificate of Analysis available at www.stemcell.com/coa.

Materials Required But Not Included

PRODUCT NAME	CATALOG #
Nuclease-free water	e.g. 79001
ArciTect™ Cas9 Nuclease OR ArciTect™ Cas9-eGFP Nuclease OR ArciTect™ Cas9 Nickase	76002 or 76004 OR 76006 OR 76009

Directions for Use

A. PREPARATION OF ArciTect™ sgRNA STOCK SOLUTION

1. Centrifuge the vial of ArciTect™ sgRNA before opening.
2. Add 40 µL of nuclease-free water to give a final concentration of 100 µM. Mix thoroughly.

   NOTE: If not used immediately, aliquot and store at -20°C for up to 6 months. Alternatively, store at -80°C for long-term storage. After thawing the aliquots, use immediately. Do not re-freeze.

B. GENOME EDITING OF CELLS WITH sgRNA

1. Prepare RNP Complex Mix by combining ArciTect™ Cas9 Nuclease (4 µg/µL or 25 µM), ArciTect™ Cas9-eGFP Nuclease (3 µg/µL or 15.8 µM), or ArciTect™ Cas9 Nickase (4 µg/µL or 25 µM) with sgRNA stock solution (prepared in section A) in an appropriate transfection buffer.

   NOTE: For electroporation reactions, we recommend 1 - 4 µM Cas9 (final concentration in electrolytic buffer), and for chemical transfection reactions we recommend 10 - 100 nM Cas9 (final concentration in plating media). For both electroporation and chemical transfection methods, a 1:2 - 1:8 molar ratio of Cas9:sgRNA is recommended. RNP complex formation must be optimized for cell type and transfection method. For nickase applications, prepare each RNP complex separately.
2. Incubate RNP Complex Mix at room temperature (15 - 25°C) for 10 - 20 minutes.
3. Deliver RNP Complex Mix into cells using your preferred transfection method.
4. Culture cells for 48 - 72 hours after transfection to allow genome editing to occur.

For complete instructions on cell type-specific genome editing with the ArciTect™ CRISPR-Cas9 system, refer to the Technical Bulletin for Genome Editing of Human Primary T Cells (Document #27155) or Genome Editing of Human Pluripotent Stem Cells (Document #27084), available at www.stemcell.com or contact us to request a copy.

Related Products

For related products, including other genome editing tools, specialized cell culture and storage media, antibodies, cytokines, and small molecules, visit www.stemcell.com or contact us at techsupport@stemcell.com.