Sigma-Aldrich®
Lab & Production Materials

MERCK

CRISPR Dual Guide Lentiviral Vectors

Double the Editing Power with Dual gRNAs and Integrated 10x Genomics Compatibility for Single-cell Analysis

Dual gRNAs are powerful research tools for discovering novel genes and cellular pathways essential for our understanding of human health and disease. Sigma-Aldrich® dual guide lentiviral vectors allow you to knockout, inhibit, or activate two separate genes simultaneously, or concentrate gene perturbation to a single locus. This makes it ideal for delivering optimized gRNAs in individual experiments, screening applications, and for single-cell analysis.

Continuing our decades-long commitment to quality and pooled lentiviral screening, our partnership with 10x Genomics continues to provide innovative screening products that allow ground-breaking discoveries at single-cell resolution.

Features:

- Dual guides have dual purpose:
  - Edit or modulate two genes at once by expressing two gRNAs in a single lentiviral construct to uncover hidden genetic relationships
  - Increase indel, inhibition, or activation efficiency when targeting the same gene – perfect for difficult to target regions
- Optimized scaffolds efficiently express both gRNAs simultaneously from individual U6 promoters in a single plasmid
- Flexibility to submit your own gRNA pool or have our experts design gRNAs for you
- Built in 10x Genomics capture sequences for easy downstream single-cell analysis with no decrease in activity
- Explore synthetic lethal interactions
- Reduce the noise in pooled screens and interrogate whole transcriptome profiles
- Two different promoters reduces recombination

10x GENOMICS Compatible Products

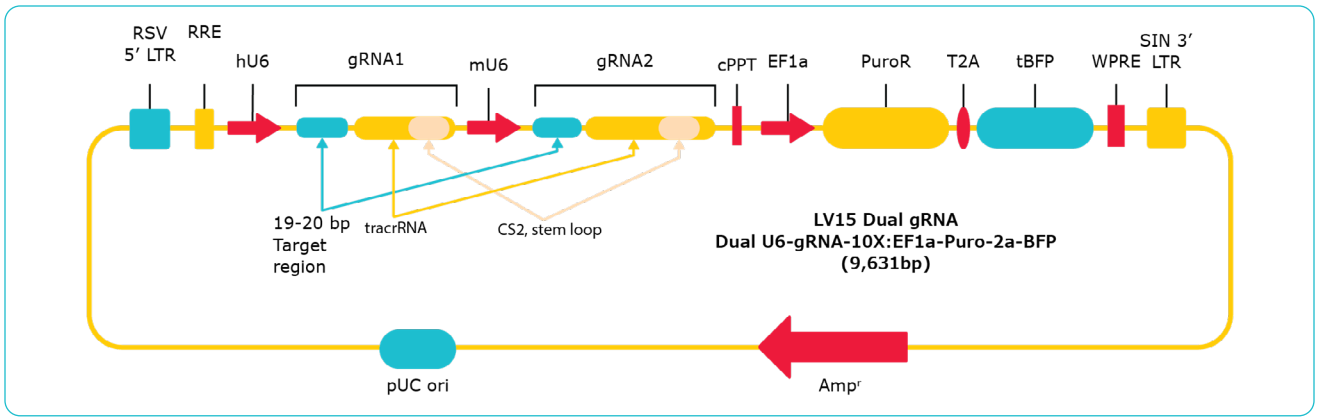

Figure 1. Dual Guide Vector Map: This vector provides enhanced capabilities to deliver custom CRISPR reagents in a dual gRNA format. It contains two U6 promoters for equal and efficient sgRNA expression. The scaffold design for each is modified for optimal expression and performance and capture sequences are compatible with 10x Genomics Feature Barcode technology for single-cell analysis with no effect on activity.

Applications:

- Functional Genomics Assays
- Drug Resistance Screens
- Biomarker Discovery
- Target Candidate Validation from Large-scale Screens
- Resolution of Complex Gene Regulatory Networks
- Cell State & Lineage Tracing
- Clonal Expansions During Disease Development

Research Areas:

- Basic & Translational Research
- Cancer Research
- Immuno-oncology
- Metabolic Disorders
- Developmental Biology

Products:

Custom Individual Clones:

- Viral Titer: $1x10^6$ particles/mL by p24 assay
- Volume: 200 µL
- Sequence verified
- Delivery Time: 4-6 weeks

Custom Pools:

- Up to 20,000 unique clones
- Viral Titer: $5x10^8$ particles/mL by p24 assay
- Volume: 200 µL
- Deep sequencing QC for representation and distribution
- Delivery Time: 6-8 weeks
- Positive and Negative controls available upon request

For ordering information and protocols please visit:

SigmaAldrich.com/CRISPR
SigmaAldrich.com/10xCRISPRpools
SigmaAldrich.com/LentiProtocols

10x GENOMICS Compatible Products

To place an order or receive technical assistance

Order/Customer Service: **SigmaAldrich.com/order**
Technical Service: **SigmaAldrich.com/techservice**
Safety-related Information: **SigmaAldrich.com/safetycenter**

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