Dharmacon™ Gene Editing Workflows

Choose the right tools for your application

Whether your goal is gene knockout from imperfect repair by non-homologous end joining (NHEJ) or creating an insertion or other knockin with homology-directed repair (HDR), this workflow guide will assist you in selecting the right Edit-R® genome engineering tools for your application.

Choose a Cas9 reagent

- Transfect an electroporated dCas9-Crm1 expression plasmid which includes selectable markers for enrichment and your choice of promoter.

Choose guide RNA

- Synthesize crRNA, tracrRNA, or sgRNA and deliver to cells whether orientated for transient expression with no risk of DNA integration and fewer off-targets.

Optimize Cas9 delivery and expression AND guide RNA delivery

- TransfectEdit-R Cas9 mRNA or protein NLS for transient expression with no risk of DNA integration and fewer off-targets.

Assess gene editing efficiency and functional knockout phenotype

- 1 day: Loss of function analysis in cell population.

Gene knockout

- Single gene knockout
- Loss of function screening of multiple genes at once

Choose a Cas9 reagent and create stable cell line

- Transfect lentiviral sgRNA pools into cells to create cell lines or stable populations.

Transduce lentiviral sgRNA pools

- Transfect cells at MOI < 1

Perform pooled screen experiment

- Analyze enriched sgRNA constructs in Reference vs. Experimental sample

Gene knockin

- Precise insertion or alteration of a gene

Choose a Cas9 reagent

- Transfect a Cas9 expression plasmid which includes selectable markers for enrichment and your choice of promoter.

Choose guide RNA and deliver to cells

- Use Edit-R® Cas9/nuclease for stable or inducible Cas9 cell lines with optimal editing efficiency.

Optimize Cas9 delivery and expression AND guide RNA as well as donor oligo delivery

- Perform arrayed screening experiment

Assess loss of function phenotype

- Characterize clonal cell line

Ready to learn more about these offerings?

Contact your local Horizon Discovery representative or email us at ts.dharmacon@horizondiscovery.com

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