GENE KNOCKOUT KIT

Elevate your guide design strategy

Knockout any human or mouse protein coding gene

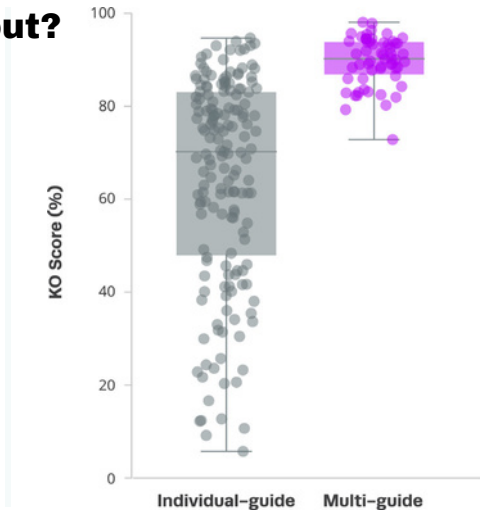
Protein knockout for any human or mouse gene

CRISPR knockout models are a powerful tool in gene function studies, pathway analysis, and target validation. However, the generation of CRISPR knockouts can be challenging due to the trial and error of finding a guide RNA that delivers efficient gene knockout.

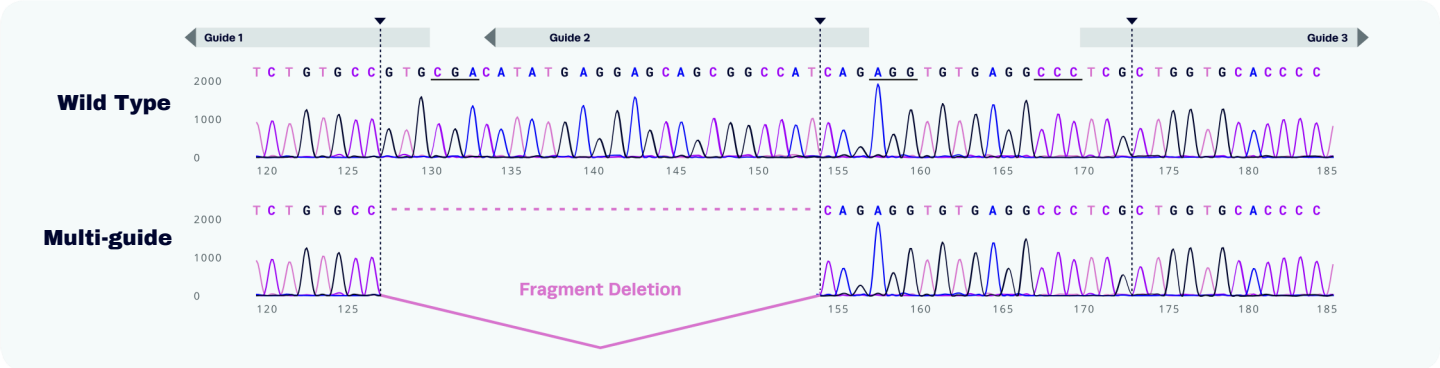
Typical CRISPR knockout strategies rely on guides that produce insertions and deletions (indels). However, this process is unpredictable and does not always result in a knockout due to the wide variety of edits that can occur. The Gene Knockout Kit takes the trial and error out of CRISPR knockouts by using a novel strategy of guide RNA design to knock out any human or mouse protein-coding gene.

How did we deliver a better knockout?

EditCo's smart informatics generates a multi-guide design which is composed of up to 3 sgRNAs targeting a single gene of interest. The guides are spatially coordinated to induce a guided repair that results in **fragment deletion** in an early exon, making it the **most reliable knockout strategy** compared to other pooled strategies. Our multi-guide targets a **single exon**, making it easier to genotype your CRISPR experiment with one single amplicon. Take advantage of our free ICE genotyping tool.



Across 32 genetic targets assessed, sgRNAs displayed 29.2% better median knockout efficiency when introduced in a multi-guide format (89.9% KO score) relative to an individual sgRNA format (69.6% KO Score)



EditCo's multi-guide sgRNA includes up to 3 modified sgRNAs (grey bars) that target a single gene of interest. When co-transfected, the sgRNAs create concurrent double-stranded breaks (vertical dotted lines) at the targeted genomic locus and consequently induce one or more 21+ bp fragment deletions.

Protein knockout on the first try

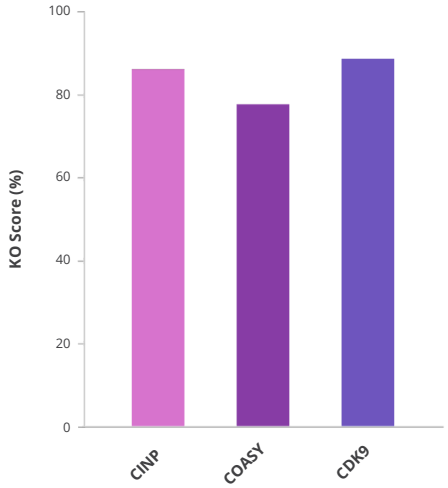
Smart informatics
Proprietary multi-guide design delivers complete gene knockout.

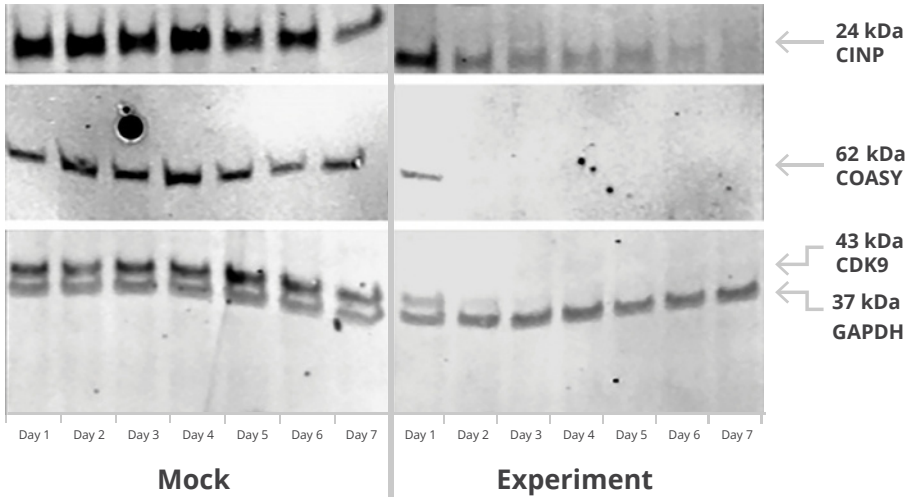
Discover faster
Eliminate the trial and error of old guide design strategies.

Guaranteed knockout*
Protein depletion or your money back.

Rapid and sustained protein knockout

Multi-guide sgRNA results in gene disruption and loss of protein expression. In this experiment, fragment deletions caused by multi-guide sgRNA editing completely ablated protein expression after seven days post-transfection in non-clonal cell lines.





Editing of three genes (CINP, COASY, CDK9) using the multi-guide approach resulted in high knockout efficiencies, as indicated by Knockout (KO) Scores (the percent of sequences that result in a putative knockout, including fragment deletions and frameshift-inducing indels).

Western blots showed loss of the corresponding proteins (right side of gel) relative to mock treated cells (no sgRNA or Cas9; left side of gel). HEK293 cells were transfected with multi-guide sgRNAs via nucleofection. For seven days post-transfection, cells were assessed for the presence of the protein target via immunoblot analysis (GAPDH expression across the same timeframe was used for normalization).

Everything you need for a successful CRISPR knockout

Complement your CRISPR experiment with our Transfection Optimization Kit, Controls and SpCas9. Add-ons available so you can optimize transfection conditions in your specific cell type, including primary and stem cells.

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