Superior Transfection for Genome Editing

VIROMER® CRISPR for RNP delivery

www.viromer-transfection.com
Maximize genome-editing, transfect RNP with Viromer® CRISPR

» Powerful transfection mediated by high-tech polymer nanoparticles
» Designed for direct delivery of Cas proteins complexed with guide RNAs
» Superior to plasmid or viral approaches, less off-target effects relative to nuclease kinetics
» Low impact on cell viability and physiology
» Comfort of an adjustable and scalable chemical reagent, easy gRNA screening, usable for HTS
» Higher reliability and efficiency of final editing compared to lipofection or electroporation

Delivery of pre-formed RNP complex is safer and faster than plasmid-based transfection:

CRISPR components directly active upon transfection
» No need to use the cell machinery
» Skips the assemblage step in the cytosol

Better control of the Cas9 activity
» Adjustable amounts of delivered Cas9 and gRNA
» Rapid protein clearance
» Transient action limiting off-target cleavage
» No integration of Cas9 gene into the cell genome

New to the Viromer® technology? Learn more about the active endosome escape mechanism behind at https://viromer-transfection.com/technology
Safe delivery and 50% of targeted editing in C2C12

Detection of crRNA:tracrRNA-ATTO™550 (IDT) 24h after RNP delivery

- Selection of gRNA among 3 synthetic constructs purchased from IDT
- Max. 50% of desired editing achieved with WT Cas9 purified in the lab, while previous assays using plasmid approach showed only 10% of efficiency.

Data courtesy of Dr. Laurence Neff, CMU - University of Geneva, Switzerland

Excess of gRNA leads to >80% of editing in HUVECs

- Sanger sequencing 24h after RNP delivery shows 80-90% of editing with expected +1 insertion as predominant InDel
- Max. effect with 6.25 nM RNP and excess of gRNA (ratio to Cas9 1:2.5)

Cas9 from IDT, gRNA targeting SMAD3 gene from Synthego. External data, contributor not disclosed

Optimization... up to 70% of efficiency in A549

17-72% of cleavage efficiency as results of T7E1 assays 48h after RNP delivery using a gRNA targeting HPRT1 and 2 different Cas9

Data generated by Lipocalyx, Halle, Germany

>60% reduction of RFP expression in stable HEK293T

- KO of RFP expression 48h after RNP delivery (final conc. 12.5nM)
- Use of the assay for Viromer library screening
- Parallel comparison with Lipofectamine™ CRISPRMAX™ showed 10-20% of efficiency.

Data courtesy of OriGene/US (incl. Cas9 and gRNA sources)

For more data, protocol details and updated feedbacks, please visit [www.viomer-transfection.com/crispr](http://www.viomer-transfection.com/crispr).
Focus on other key steps, we have the right delivery system for your genome-editing workflow!

Plan experiment
Design and build
gRNA sequences

Prepare reagents
Complex gRNA and Cas9

Deliver with
Viromer® CRISPR

Verify and validate genome editing

How getting ready with Viromer® CRISPR?

The only need is to pre-form in vitro complex of Cas9 and gRNA as ribonucleoproteins!
Once made, mix it with Viromer® CRISPR, wait for 15 min and go onto your cells as for any standard transfection reagent.

Form RNP complex

Cas9

» Usable for forward or reverse transfection
» Labeled gRNA or Cas9 can be used to monitor transfection efficiency and for FACS sorting
» Frame for optimization by playing on RNP concentration, Cas/gRNA ratio, amount of reagent and cell preparation

Ordering information

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Related products - Viromer® RED, Viromer® PLASMID, Viromer® mRNA.

Delivery of CRISPR plasmids[1,2] or mRNA-Cas[3] are achievable with Viromer® RED. For strongest performance, please refer to the new generation of Viromer® reagents especially optimized for enhanced plasmid and mRNA transfection.