Microsynth

Optimized crRNA and tracrRNA for Your In Vitro and In Vivo CRISPR Experiments

Ready-to-use crRNA and tracrRNA – no costly cloning necessary
Increased half-life due to proprietary chemical modifications
Ideal for screening – available in various quantities

Background Information

CRISPR/Cas has advanced to a standard technology in modern molecular biology and biotech labs in a very short time since its first publication in 2012.
Briefly summarized: An endonuclease (Cas) is directed to a target DNA sequence using guide RNA(s). The nuclease initiates a double strand break which leads to a knockout of the gene of interest. Basically every target can be made accessible for knocking out by this method. The easy programmability, the simplicity of the protocols and the stability of the system are clear advantages of CRISPR/Cas. Common experiments involving CRISPR/Cas are performed by cloning the Cas nuclease and the sgRNA into a plasmid for transcription and expression – this is no longer needed!

Microsynth's Optimized Guide RNA's for Your CRISPR/Cas Experiments

To further simplify your lab work, Microsynth offers you two **ready-to-use guide RNAs** (crRNA and tracrRNA) which – together with the Cas endonuclease – can directly be used in your experiment **without any cloning steps**.
The two guide RNAs have been optimized by including **various types of chemical modifications** resulting in an enhanced stability against nucleases. Compared with standard RNA, this **prolongs the half-life** of the guide RNAs in the cell and **increases the success** of your CRISPR/Cas experiment. High turnaround for **multiple target sites** since you only need to design a new crRNA while you use the same tracrRNA. These advantages as well as the availability of various nmol quantities make the Microsynth guide RNA's **ideal for screening**.

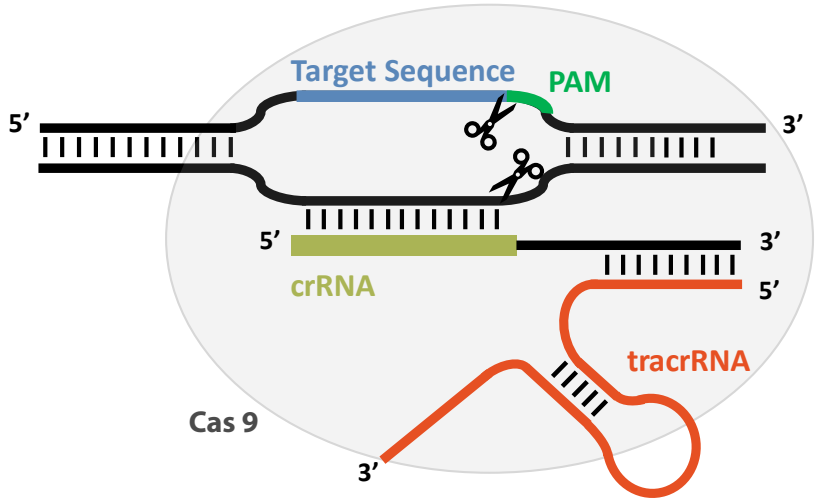

***Figure 1**: The crRNA consists of a 19-21 nt sequence (binding to the complementary DNA strand) as well as a tracrRNA fusion domain.*
When complexed with tracrRNA and Cas9 protein, a double strand break will be created at a locus complementary to the 19-21 nt guide RNA sequence, 3-4 bp upstream from a PAM sequence (5'-NGG-3').

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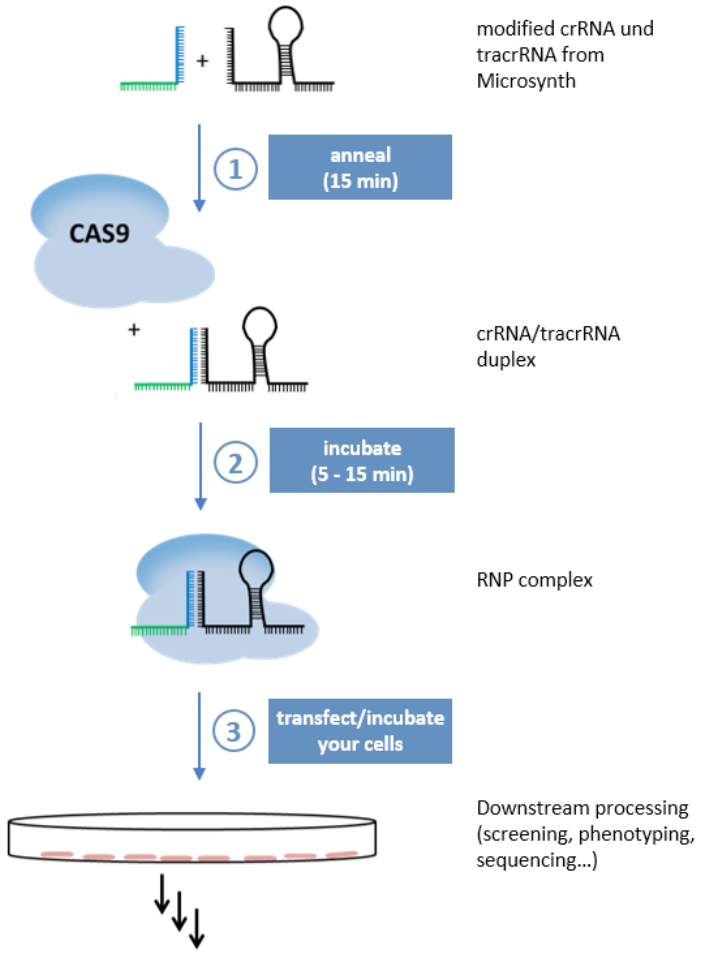
Our Product

crRNA	tracRNA
Chemically modified for increased half-life	Chemically modified for increased half-life
2 nmol minimal yield guaranteed	2 nmol or 5 nmol aliquots
Larger amounts on request	Larger amounts on request
19 - 21 nt target sequence + 3 PAM sequence	Universally usable for all your experiments
PAGE purified for highest purity and efficacy	PAGE purified for highest purity and efficacy
100% quality control	100% quality control

Experimental Procedure

Simple 3 Step protocol to your knock out or homology-directed repair (HDR) clone.



Step 1: Anneal the crRNA and the tracrRNA

Step 2: Incubate your crRNA/tracrRNA duplex with the Cas enzyme of your choice to form the ribonucleoprotein (RNP) complex.
Alternatively your cells might already express the Cas9

Step 3: Transfect your cells using lipofection, injection or electroporation!

How to Order?
Using your gene maps and online available software, you choose your target site of your gene of interest.
Please send your 19-21 bp target sequence from 5'to 3'plus the 3 nt PAM sequence to oligo.support@microsynth.ch
Need More Information?
Call us at +41 71 722 83 33 or
Email us at oligo.support@microsynth.ch

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