

GenCRISPR sgRNA Design Tool Protocol

Enabling Easy & Precise Design

Presenter:

Date:

Applications & Advantages – sgRNA design tool

What is sgRNA design tool?

- Design sgRNA sequences for knock - out experiment, downstream order **EasyEdit sgRNA / SafeEdit sgRNA**

Resources > Bioinformatics Tools

EasyEdit sgRNA Now Starting at Only \$79/2nmol!

Design high-performance CRISPR guide RNAs using the most up-to-date design algorithm, for effective gene editing. [Select Gene](#) / [Design](#) / [Order](#)

Nuclease: SpCas9

Target Species: Homo sapiens (GRCh38.p13)

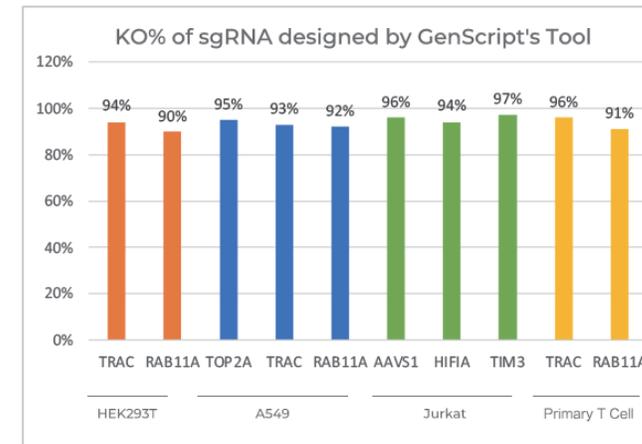
Number of gRNAs Per Gene: 6

Input Format: Gene Symbol

Submit

Advantages of sgRNA design tool

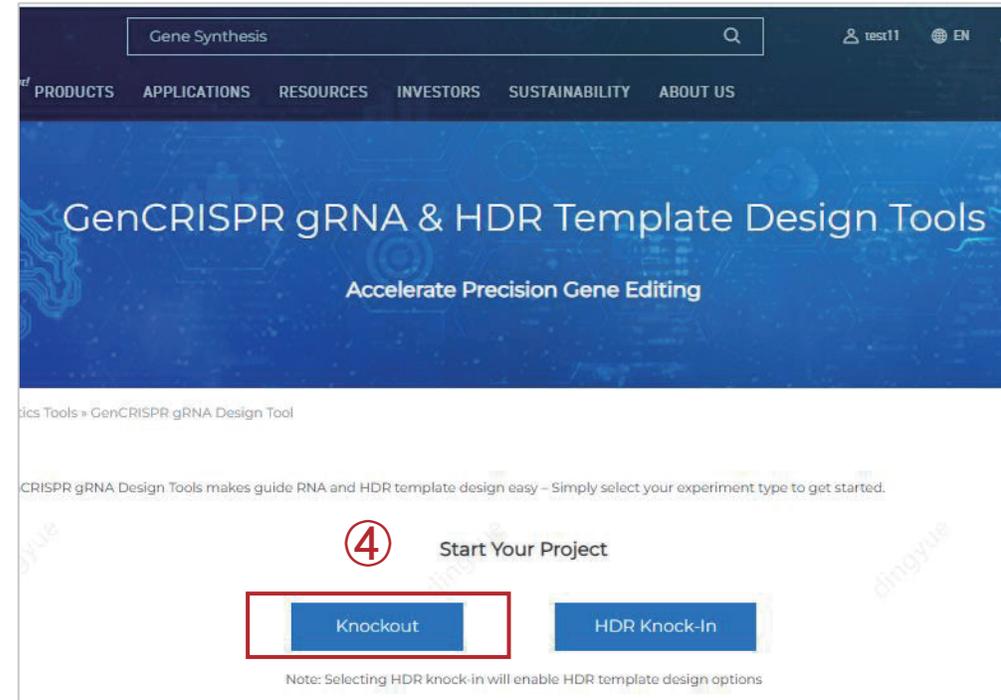
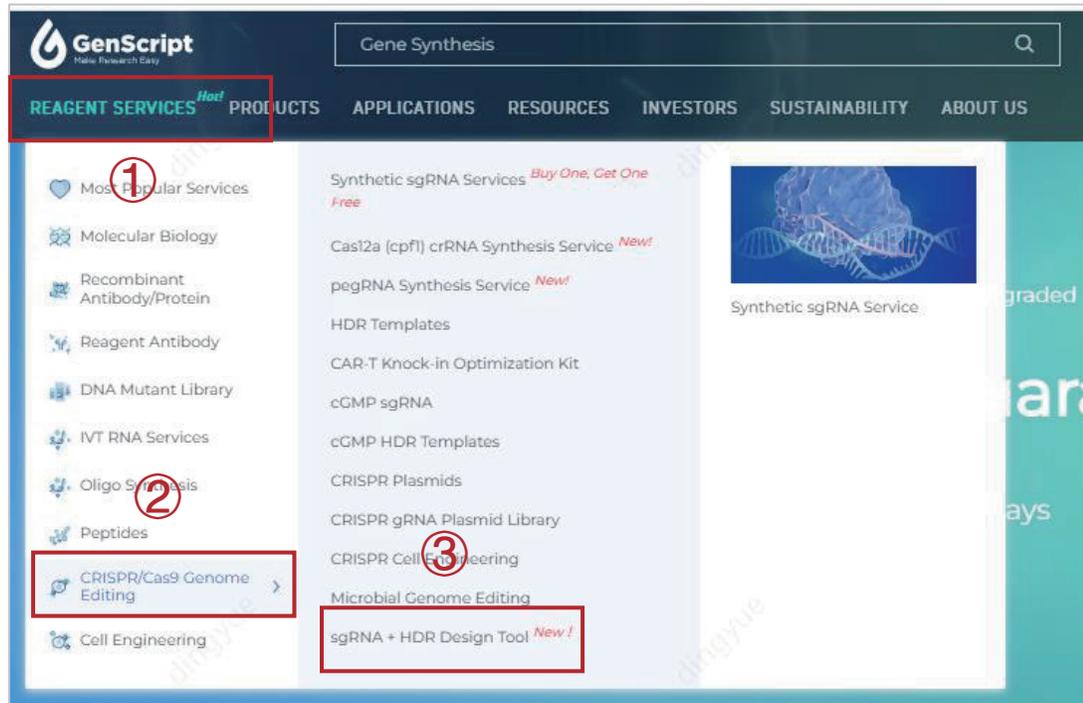
1. **Comprehensive applications:** Support 10 species, Cas9 and Cas12a
2. **More precise design:** updated on - target and off - target scores
3. **Enhance editing efficiency:**
 - Designs target early exons to avoid truncated functional proteins
 - Higher transcript coverage
 - Ideal GC% for sgRNA
4. **Validated efficiency:** Indel% up to 97% validated by experiments



Design Process – sgRNA design tool

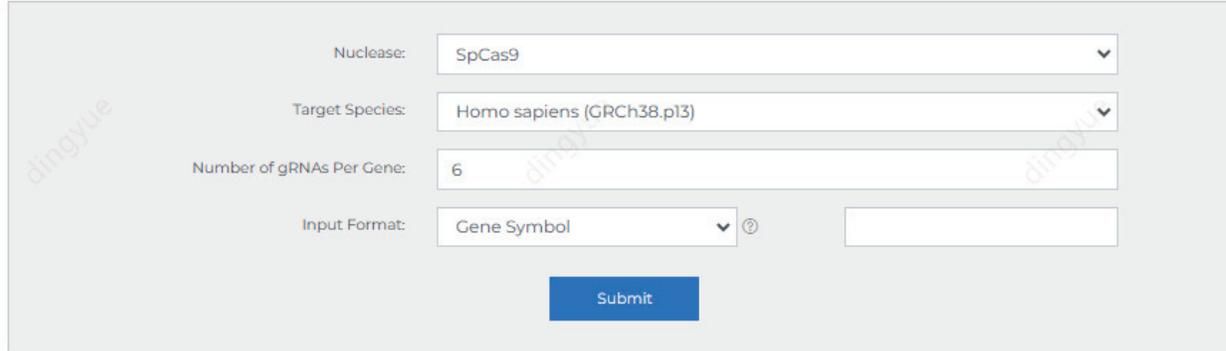
Where can we find sgRNA design tool?

1. Visit the address: <https://www.genscript.com/tools/gRNA-design-tool>
2. Find the tool in official site:



Design Process – sgRNA design tool

sgRNA design tool design process



The screenshot shows the sgRNA design tool interface. It features four input fields and a submit button. The fields are: Nuclease (SpCas9), Target Species (Homo sapiens (GRCh38.p13)), Number of gRNAs Per Gene (6), and Input Format (Gene Symbol). A blue Submit button is located below the input fields.

Step 1. Enter your request

1. Select Nuclease / Select species / Enter Gene symbol
2. Click “submit”

Design Process – sgRNA design tool

Top-ranked guide RNAs for knocking out the ADAR gene

Top-ranked guide RNAs and parameters

Option	Rank	Gene Symbol	Gene ID	Sequence	PAM	Strand	Location	On Target Score	Off Target Score	Overall Score	Primer Design
<input checked="" type="checkbox"/>	1	ADAR	103	AATAGTATCCGGCAGCACC	ACG	-	154601230..154601252	0.60	0.00	77.00	<input checked="" type="checkbox"/> Yes Options
<input checked="" type="checkbox"/>	2	ADAR	105	ATGATGGCTCGAACTCACC	TGG	+	154601212..154601234	0.47	0.18 Detail	52.00	<input checked="" type="checkbox"/> Yes Options
<input checked="" type="checkbox"/>	3	ADAR	103	CAGCTGAAGAACCCTATCAG	CCG	-	154601122..154601144	0.56	0.40 Detail	34.00	<input checked="" type="checkbox"/> Yes Options
<input type="checkbox"/>	4	ADAR	103	TGGGGAGGGCAGCACTCCA	TGG	-	154597137..154597159	0.67	0.37 Detail	56.00	<input type="checkbox"/> Yes Options
<input type="checkbox"/>	5	ADAR	103	CTCGCCATTGATGACACC	TGG	+	154598554..154598576	0.14	0.00	37.00	<input type="checkbox"/> Yes Options
<input type="checkbox"/>	6	ADAR	103	TTGGAGTACGCCCGCTCCA	TGG	-	154596859..154596881	0.40	0.00	63.00	<input type="checkbox"/> Yes Options

Download selected results

Back Design more sgRNA for ADAR Order gRNA plasmid construct Order sgRNA oligo

Step 2. Select your sequences

1. We recommend top 3 sequences for one gene
2. Selected desired sgRNA and click “order sgRNA oligo ” for chemical synthetic sgRNA or “order gRNA plasmid construct”

Parameters introduction

- On target score: higher score means higher editing efficiency
- Off target score: lower score means lower off target effects
- Over all score: higher score means higher on target score, lower off target score and cover more transcripts
- Ranking (most comprehensive evaluation): Higher over all score and target earlier exon to avoid truncated functional protein

Notes:

- Click the black question marks to see the explanations (red labeled box)
- Click the sequence to view its position in sequence map (green labeled box)
- Click “download selected results” to download the sequences (blue labeled box)

Design Process – sgRNA design tool

GenScript
Make Research Easy

test11 CONTACT US MY ORDER

sgRNA Ordering (Required Fields) Information Cart Confirm Order Result Feedback

Delivery Format: Dry Powder
Format: Single Tubes

Enter the sgRNA sequence(s) into the spreadsheet below. Clear Table

	Name	Input Sequence	Final sgRNA Sequence	Length	Quantity	Purity	Aliquoting Into
1	ADAR-1	AATAGTATCCGCCAGCACC	m ^A m ^A m ^U rArGrUrArUrCrCrGrCrGrCrArGrC	20 nt	2 nmol	EasyEdit	1
2	ADAR-2	ATGATGGCTCGAACTCACC	m ^A m ^U m ^G rArUrGrGrCrUrCrGrArArArCrUrC	20 nt	2 nmol	EasyEdit	1
3	ADAR-3	CAGCTGAAGAACCCATCAG	m ^C m ^A m ^G rCrUrGrArArGrArArCrCrCrArL	20 nt	2 nmol	EasyEdit	1
4							
5							
6							
7							
8							
9							
10							

Add rows Apply

Custom Primer for Assessing Editing Efficiency

Enter the primer sequence(s) into the spreadsheet below. Clear Table

	Primer Name	Primer Sequence(5'->3')	Length	Quantity
1	ADAR-1 Pr1 LeftPrimer	AAAGAACGCCAGAGTTCCTC	20 nt	2 nmol
2	ADAR-1 Pr1 RightPrimer	ATATTCTACAGCCCCTGA	20 nt	2 nmol
3	ADAR-2 Pr1 LeftPrimer	TCACCTGTAATATACCACA	20 nt	2 nmol
4	ADAR-2 Pr1 RightPrimer	TTGACTAGCGAACTGGGCAT	20 nt	2 nmol
5	ADAR-3 Pr1 LeftPrimer	AGAAACAGGCAAGAGCCCA	20 nt	2 nmol

Add rows Apply

Add To Cart

Step 3. Order your sgRNA

1. Select quantity, purity, aliquoting tubes
2. Click "Add to cart"
3. Click "Continue" → "Get a quote" → "Thank you for your Quotation!"

Notes:

- Click "Clear Table" if you do not need product in the table. (red labeled box)