CRISPR Optimization

CRISPR-Cas9 Guide RNA Design

Target DNA Sequence:

...	20bp target sequence	NGG	...

Guide RNA binding site — PAM site

Guide RNA (gRNA):

	20nt spacer sequence (complementary to target)	scaffold

Cas9 Protein
+ gRNA complex

✂
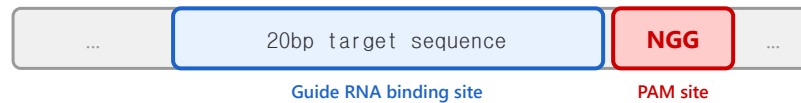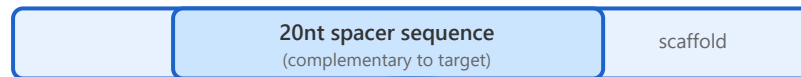
Double-strand break (DSB)

🤖 AI-Powered Optimization:
- On-target efficiency scoring
- Off-target prediction
- Edit outcome prediction

Guide RNA design
20nt spacer + scaffold optimization

Off-target prediction
Minimize unintended cuts

Efficiency scoring
On-target activity models

Prime editing
Precise base substitutions

Base editing
C→T, A→G conversions