

Filtering for different Cas nucleases and PAM sequences

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A wide selection of Cas nucleases are available under the Cas Type filter

One of the many draws and advantages of using the CRISPR/Cas nuclease system for gene manipulation is its flexibility and applicability across a wide array of systems, organisms, and [experiments](#). Thus, in addition to filters for **Application** (e.g. CRISPR knockdown, knockin, etc.), you can also filter for specific [Cas Types](#) to find the one with the desired nuclease activity and PAM (protospacer adjacent motif) sequence. Find the **Cas Types** filter under *Cas Nuclease specs*. Your choices include:

Cas Type	PAM	Notes
Cas9 (aka SpCas9)	NGG	<i>Streptococcus pyogenes</i> Blunt-ended dsDNA break. gRNA spacer length ~18-24 nt.
Cas9 null (aka SpCas9 null)	NGG	<i>Streptococcus pyogenes</i> Engineered not to cut DNA. May be used for targeting.
Cas9 nickase	NGG	<i>Streptococcus pyogenes</i> Creates a single-stranded cut. May be used with two adjacent sgRNAs to reduce off-target effects.
saCas9	NNGRR(N)	<i>Staphylococcus aureus</i> Blunt-ended dsDNA break. Similar to SpCas9 in use.
saCas9 null	NNGRR(N)	<i>Staphylococcus aureus</i> Engineered not to cut DNA.
Cas12a (aka Cpf1)	TTTV	May target and cleave single-stranded DNA. Cas12a may also leave 5' overhang after cleavage.

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