

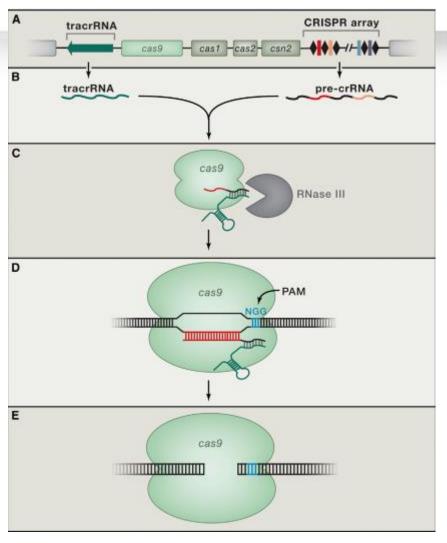
#### CRISPR/Cas9

Clustered Regularly Interspaced Short Palindromic Repeats

**CRISPR** Associated Protein 9



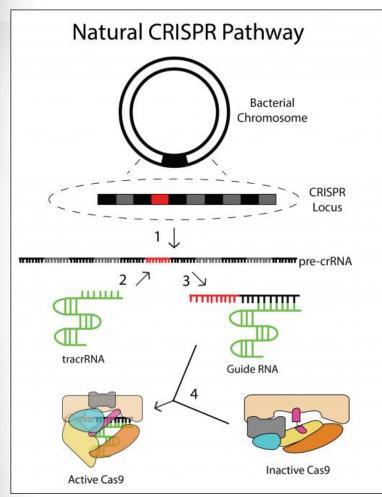
#### Adaptive immune system of prokaryotes

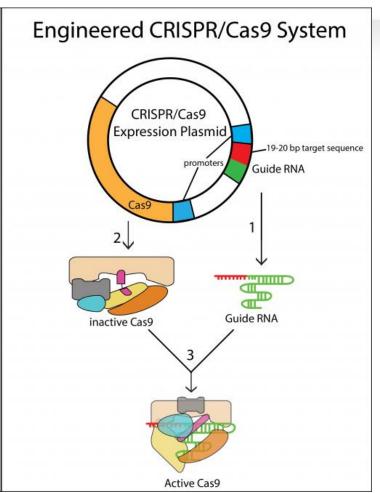


Lander , E. Cell. (2016)



#### CRISPR/Cas9 technique

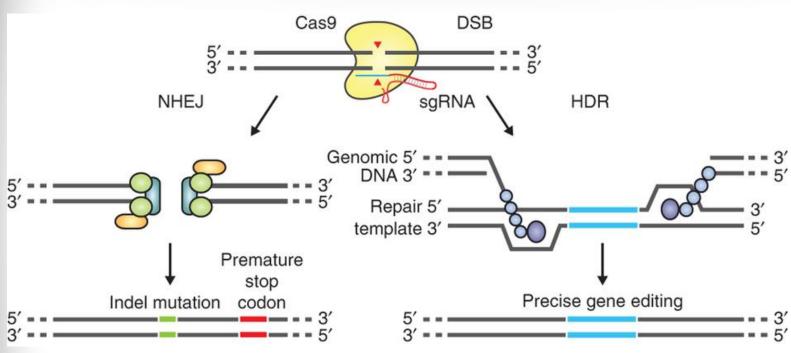




https://sites.tufts.edu/crispr/genome-editing/



# DSB repair pathways



Ran, F.A. et al. Nature Protocols. (2013)



### **Applications**

Cas9 nuclease or nickase cleavage

Cuts

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Deletions



Cas9<sub>nuclease-null</sub> protein fusions

Regulation



Labeling



Adapted from Mali, P. et al. Nature. (2013)



# The significance of CRISPR

- Research
- Potential for Biomedicine
- Contender for a Nobel Prize

