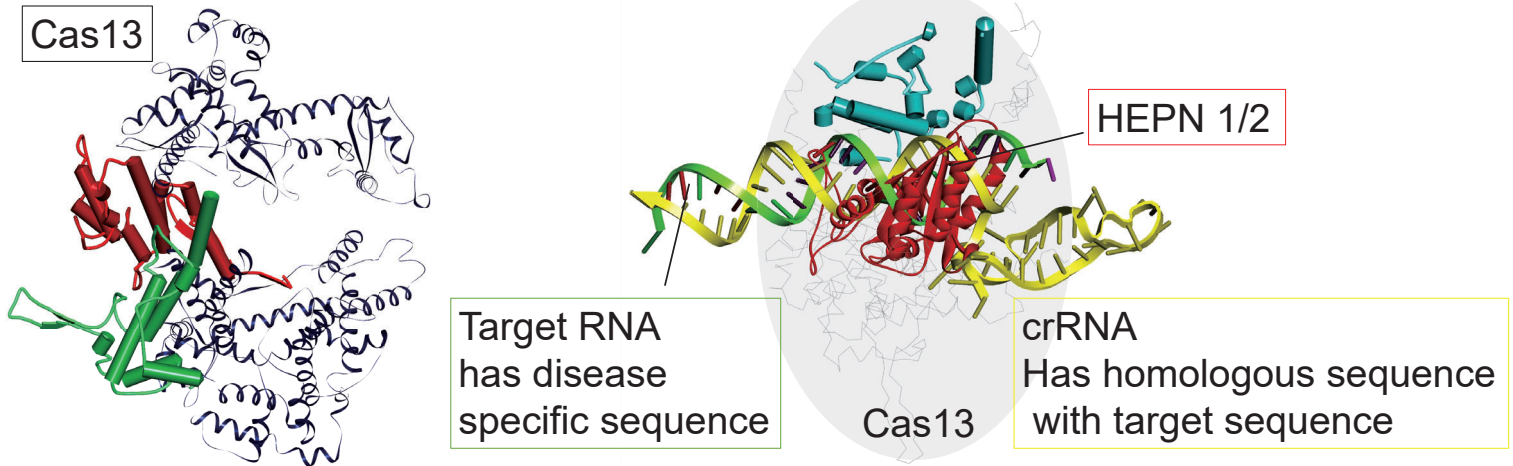


# Research and developing for practical application of RNA missile therapy using gene editing technology

遺伝子編集技術を用いたRNAミサイル療法実用化への開発研究

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## Leading role of RNA missile therapy: Structure of Cas13 protein



## Advantages of RNA targeting therapy

Risky Business

Problems in *in vivo* use of genomic gene modification technology

- Invasion to the genome
- Nonspecific gene editing

DNA editing

dsDNA



VS

RNA targeting

ssRNA



Safe!

Advantage in *in vivo* use of ssRNA modification technology

- No invasion to the genome
- High sequence selection specificity

## Things we can do by RNA targeting

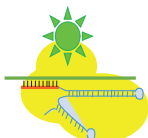
RNA cleavage

Cas13 Nuclease



RNA Labeling visualization

Fluorescent protein



RNA Sequence conversion

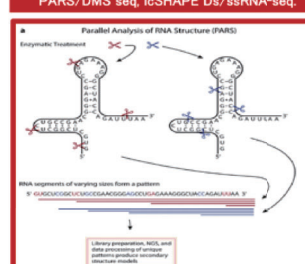
Gene rewrite element



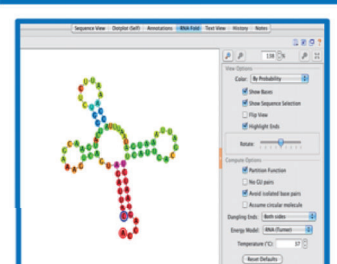
RNA Structure prediction

What need to do before crRNA designing

データベースモデリング  
PARS/DMS seq, icSHAPE Ds/ssRNA-seq



予測モデリング



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