

Understanding and treating viral and neurological diseases through RNA-related discoveries

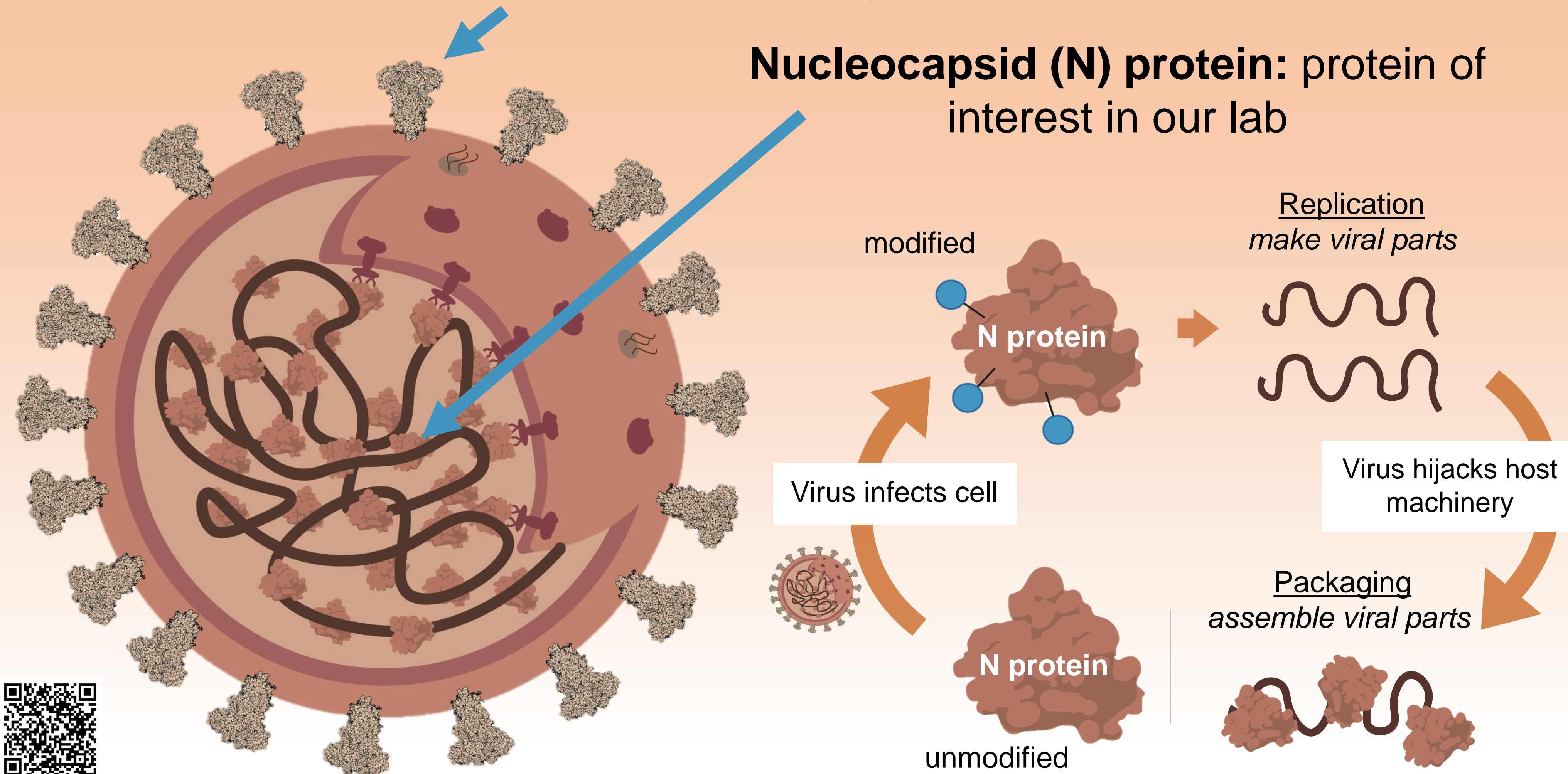
Musier-Forsyth lab

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Deciphering the role of Nucleocapsid protein modification during SARS-CoV-2 infection

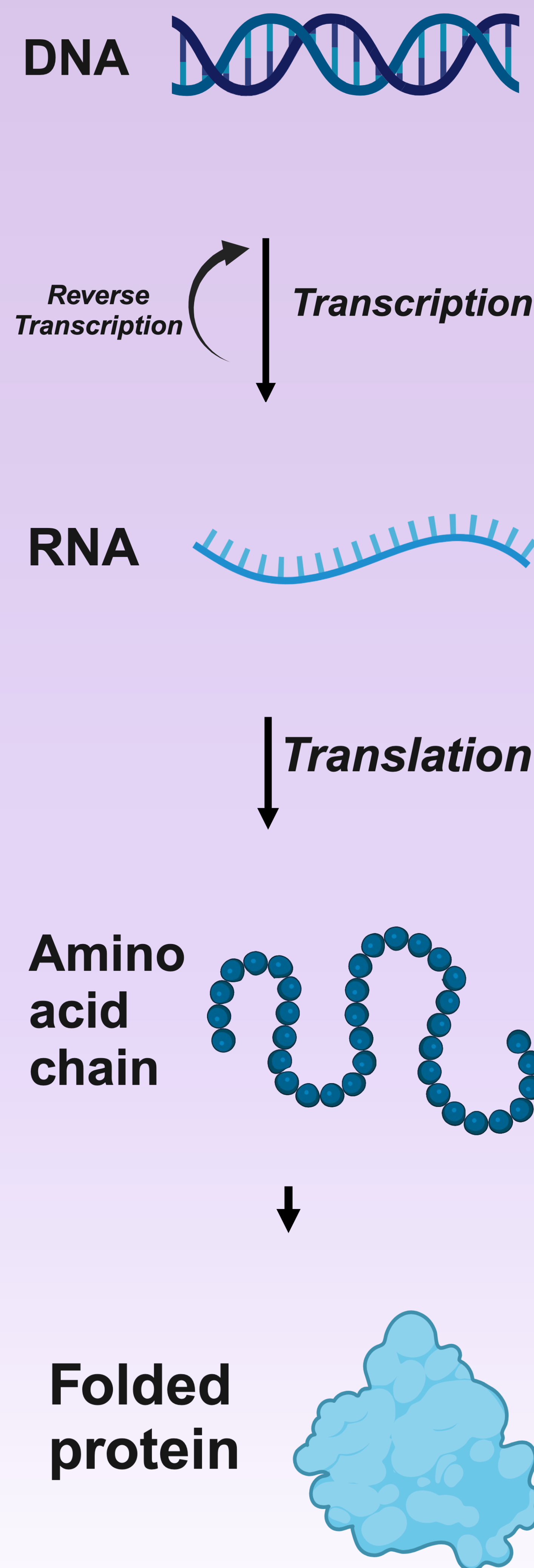
Spike protein: target of COVID-19 mRNA vaccines

Nucleocapsid (N) protein: protein of interest in our lab

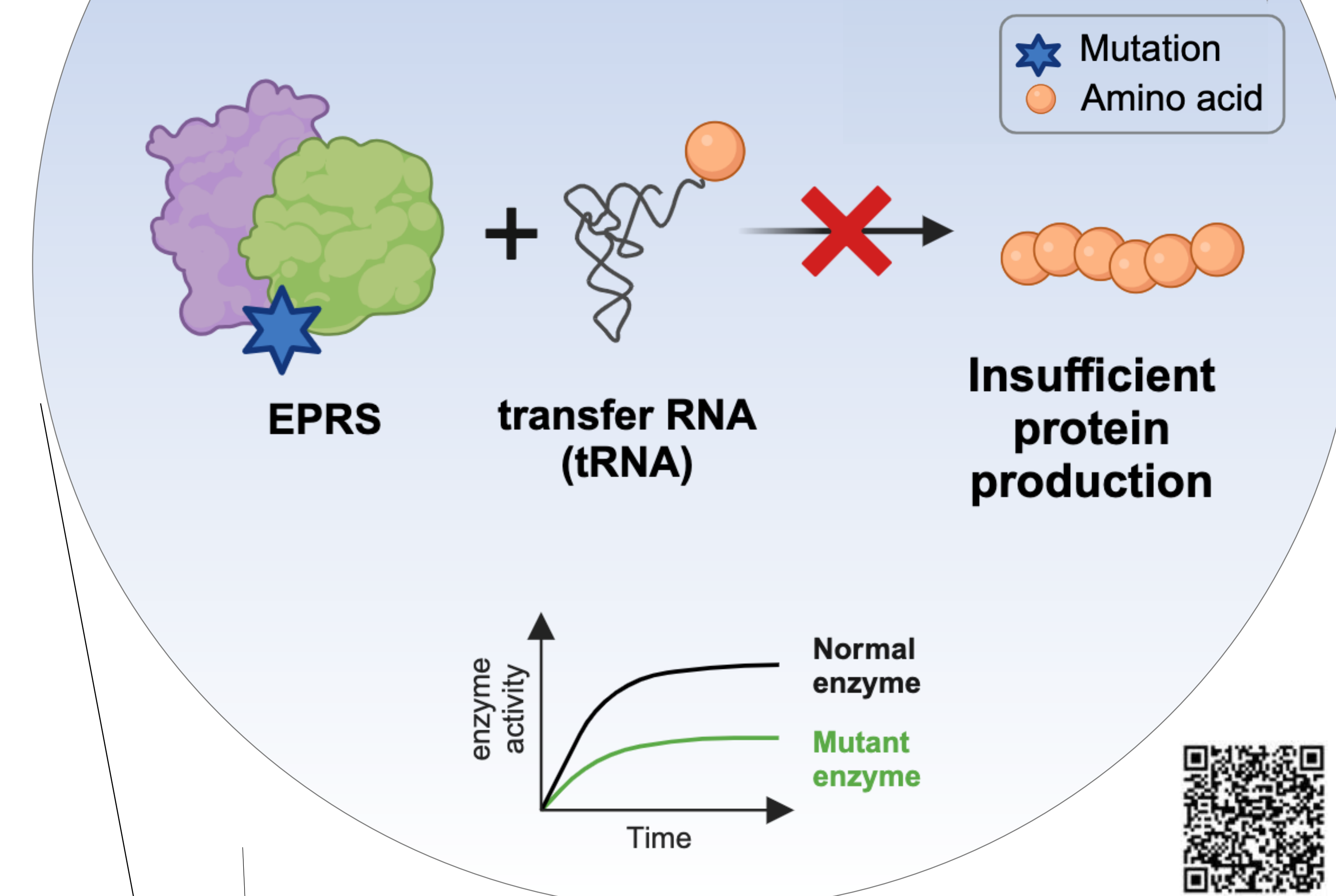


spike protein cartoon generated from PDB crystal structure 6VXXdoi: 10.2210/pdb6VXX/pdb

Central Dogma of Molecular Biology



Glutamyl-Prolyl tRNA Synthetase (EPRS) mutations are linked to neurological disease

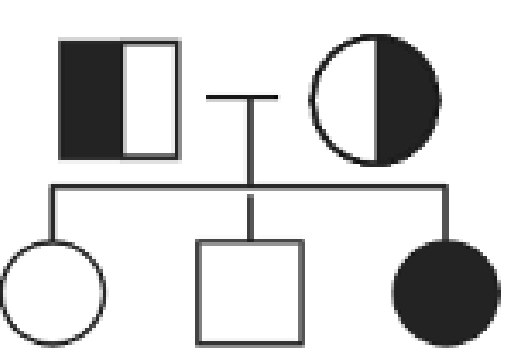


Clinical symptoms

- Developmental delay
- Hearing & vision loss
- Seizures
- Abnormal brain size

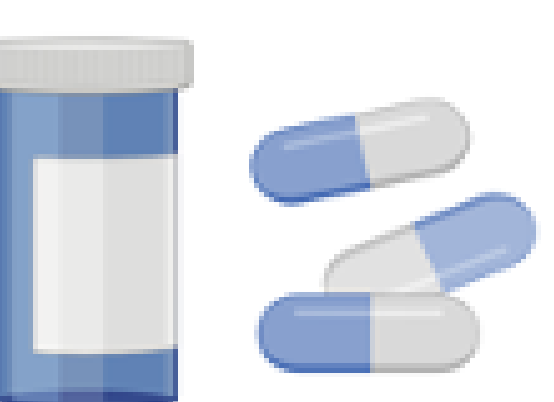
Affected population

- Rare genetic disease
- Detected as early as infancy



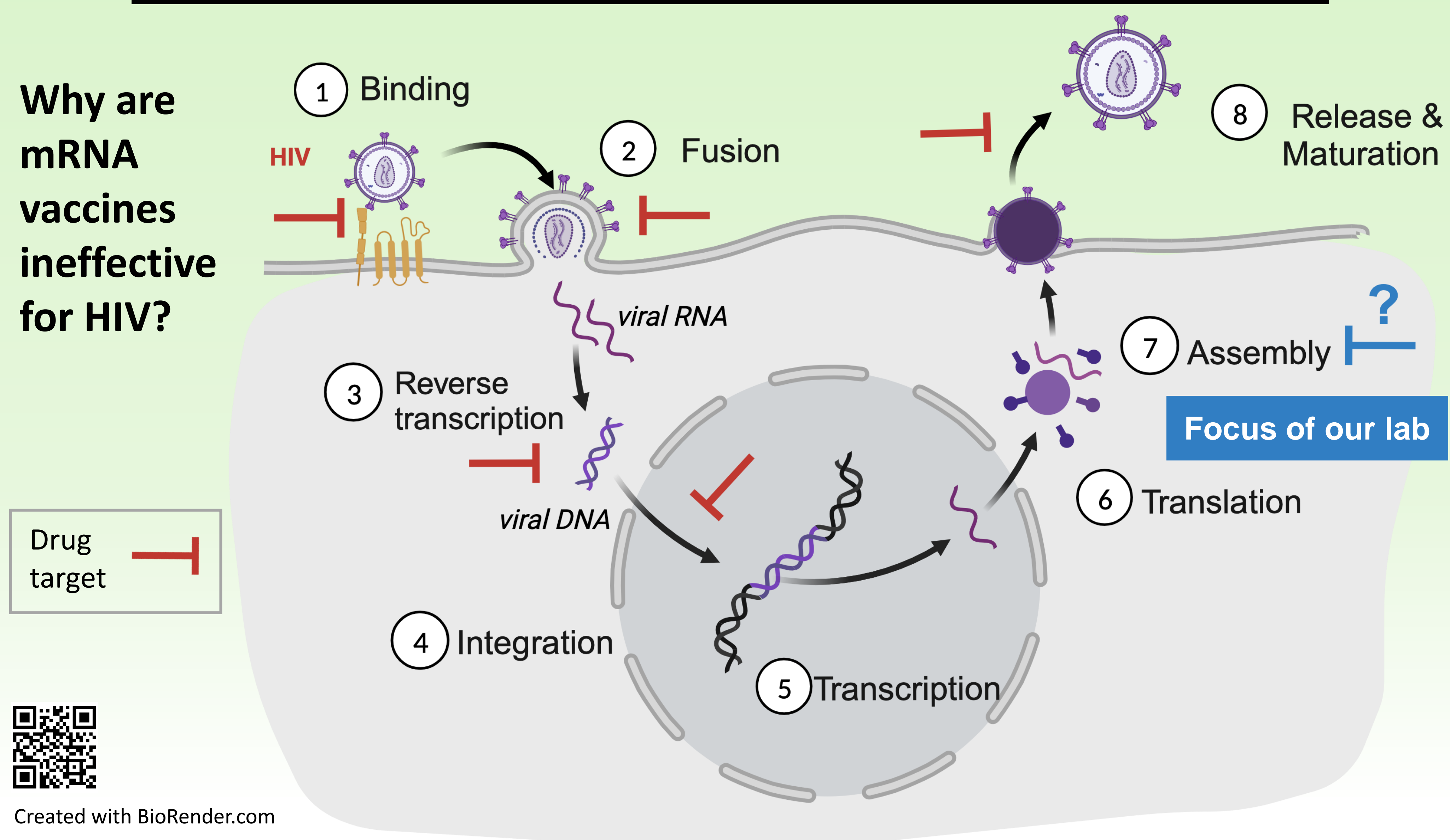
Treatments

- Currently investigating future therapeutics



Current HIV-1 therapeutics target essential viral components

Why are mRNA vaccines ineffective for HIV?



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