CRISPR-Based Antivirals as Broad-Spectrum Therapeutics

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PURPOSE | **Antiviral targeting viral families**

Leverage CRISPR gene editing technology as a broad spectrum antiviral by targeting essential genes that are shared among viral families.

ACHIEVEMENTS | **Conservation and efficacy**

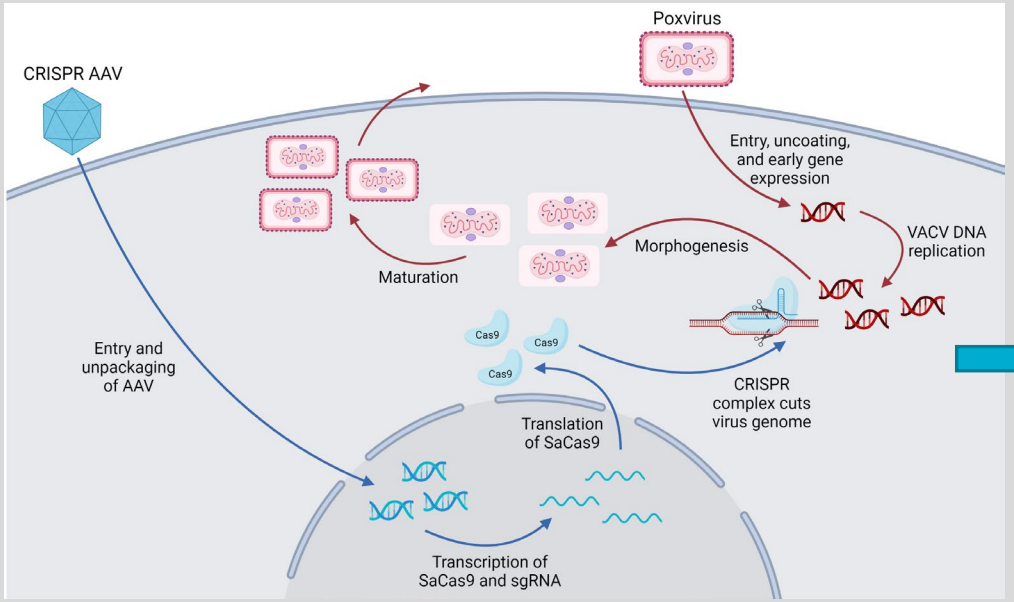
Antiviral targets conserved across all orthopoxvirus species provide broad-spectrum protection with one therapeutic. These antivirals provided significant protection to host cells when tested *in vitro.*

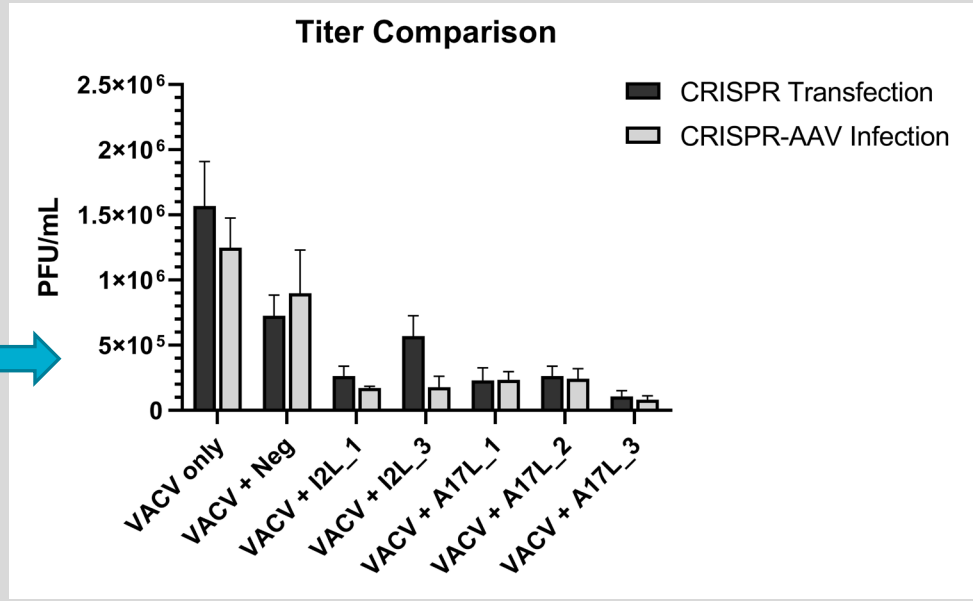
IMPLICATIONS | **High sensitivity and specificity**

CRISPR technology is possibly more sensitive and specific than traditional treatments as it cleaves the viral genome directly opposed to triggering the human immune system.

Follow on work demonstrated success in targeting human coronaviruses using the same methodologies, suggesting this work could be used as a paradigm for developing therapeutics for numerous viral families.

CRISPR-AAV particles **disrupt** poxvirus lifecycle resulting in up to **93% reduction** in viable virus concentration.





Siegrist, Cathryn M et al. "CRISPR/Cas9 as an antiviral against Orthopoxviruses using an AAV vector." Scientific reports vol. 10,1 19307. 9 Nov. 2020, doi:10.1038/s41598-020-76449-9