



Program Pack

# Nipah (mRNA-1215)

# Nipah (NiV) virus overview

**NiV, a zoonotic virus transmitted to humans from animals, contaminated food, or through direct human-to-human transmission, causes a range of illnesses including fatal encephalitis**

## Disease burden

- “The worst disease no one has ever heard of”<sup>1</sup>
- Identified as the cause of isolated outbreaks since 2000 in India, Bangladesh, Malaysia, and Singapore and is considered a significant pandemic threat<sup>2,3</sup>
- Case fatality rate among infected is estimated at 40-75%<sup>2,3</sup>
- Severe respiratory and neurologic complications have no treatment other than intensive supportive care<sup>1,2</sup>
- NiV outbreaks cause significant economic burden to impacted regions due to loss of human life and interventions to prevent further spread, e.g. slaughter of infected animals<sup>4</sup>

**Target population:** Pandemic preparedness

**Unmet need:** No approved vaccine or treatment

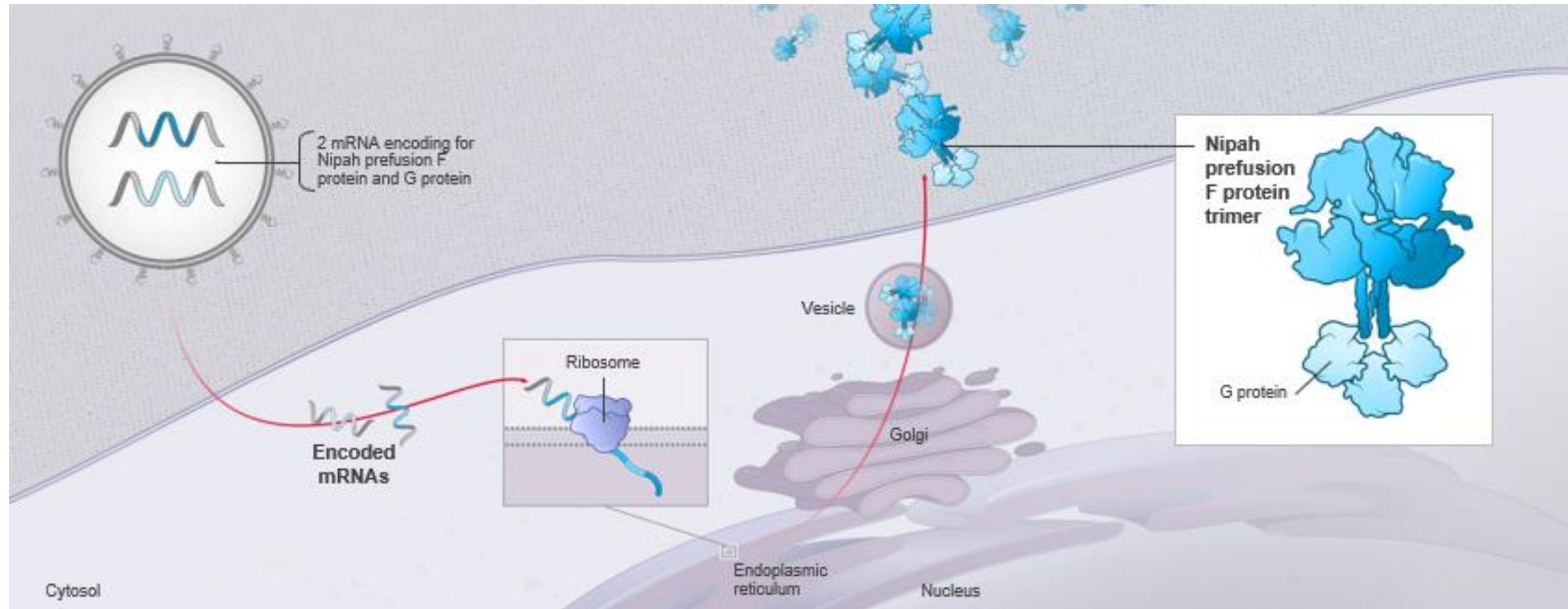
## Spectrum of Nipah symptoms<sup>2</sup>

<b>Mild</b>	• Fever
	• Headaches
	• Myalgia
	• Vomiting
	• Sore throat
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<b>Severe</b>	• Severe respiratory distress
	• Pneumonia
	• Seizures
	• Altered consciousness
	• Encephalitis
	• Coma
	• Death

<sup>1</sup>Nipah Virus. Eco Health Alliance. <https://www.ecohealthalliance.org/2018/05/nipah-virus>. Accessed 18Dec2020. <sup>2</sup>Nipah virus infection. WHO. [https://www.who.int/health-topics/nipah-virus-infection#tab=tab\\_1](https://www.who.int/health-topics/nipah-virus-infection#tab=tab_1). Accessed 18Dec2020. <sup>3</sup>Wan L and Anderson D. Viruses in bats and potential spillover to animals and humans. Current Opinion in Virology 2019;34:79-89. <sup>4</sup>Ochani R, et al. Nipah virus – the rising epidemic: a review. Le Infezioni in Medicina 2019; 2:117-129.

# Nipah vaccine (mRNA-1215) overview: Phase 1 ongoing

mRNA vaccine co-developed by Moderna/NIH-VRC; The trial is sponsored and funded by NIAID



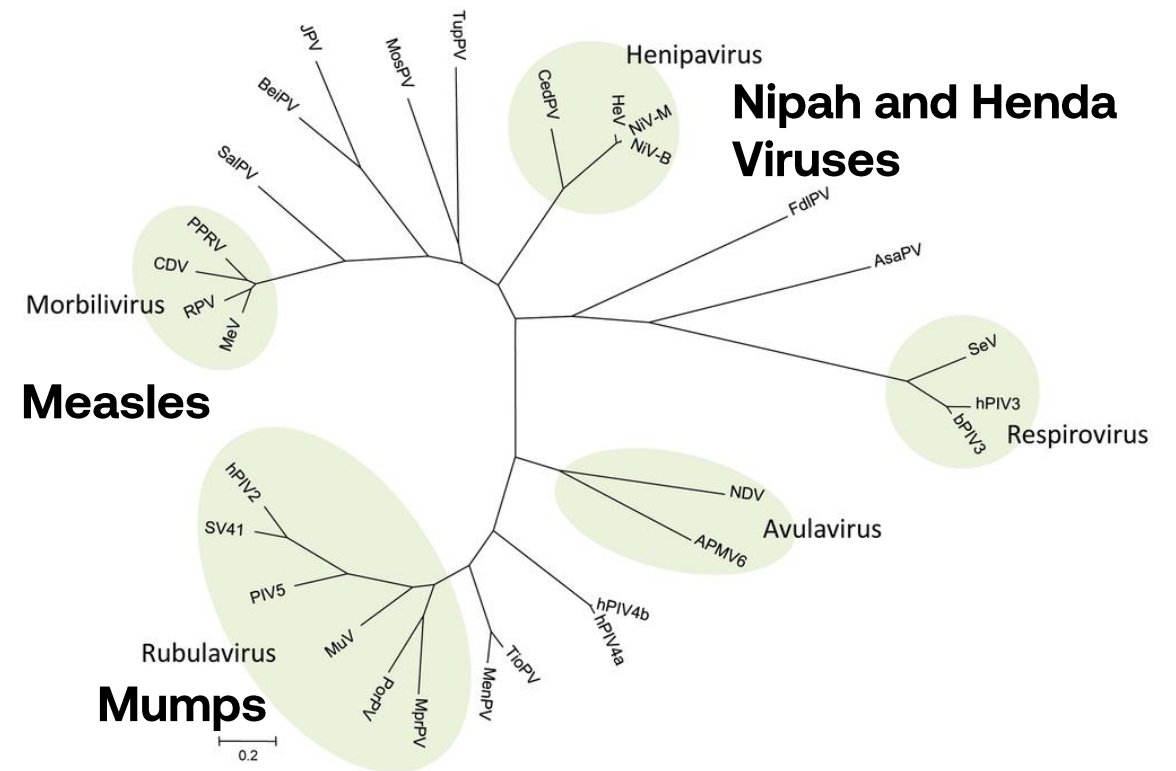
This Phase 1 dose-escalation, open-label clinical trial is the first study of mRNA-1215 in healthy adults to evaluate the safety, tolerability, and immunogenicity of a NiV mRNA vaccine

# Nipah vaccine (mRNA-1215): Phase 1 testing is for pandemic preparedness

Aim to define **general solution for vaccine antigen design** and to develop approaches for platform manufacturing

Clinical testing can help determine whether having **successful antigen designs for viruses within a given family** might facilitate rapid development of vaccines against similar viruses

*Nipah virus is closely related to some of the most common human pathogens*



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