







Conformational changes in hemagglutinin that lead to membrane fusion.

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Hemagglutinin in Action

Hemagglutinin is a deadly molecular machine that targets and attacks cells. This occurs in several steps. First, the three binding sites at the top of the spike bind to sugars on cellular proteins, shown in green at the top left (PDB entry [1hge](#) ). Then, the whole virus is carried inside the cell into the endosome and the cell adds acid, which normally digests the stuff inside the endosome. But in the case of the virus, the acidic environment serves to arm the attack mechanism. In acid, hemagglutinin unfolds and then refolds into an entirely different shape. The portions shown in orange and red are normally folded against the protein, but in acid, they pop out and point upward, as shown in the center illustration (PDB entries [1htm](#) , [1ibn](#)  and [2vir](#) ). The red portion, termed the fusion peptide, has a strong affinity for membranes, so it inserts into the cell membrane and locks the virus to the cell. Then, as shown on the left (PDB entry [1qu1](#) ), the yellow portions zip up the side of the protein, pulling the two membranes close together. Finally, the new conformation of hemagglutinin somehow causes the two membranes to fuse—that part is still not well understood—and the viral RNA flows into the cell, starting the process of infection.

Filter by viral protein

Refine Results

Reset

Virus

Influenza A virus, taxid:11320

+

Accession

+

Sequence Length

+

Ambiguous Characters

+

Sequence Type

+

RefSeq Genome Completeness

+

Nucleotide Completeness

+

Isolate

+

Genotype

New!

H5N1

+

Proteins

hemagglutinin

+

Provirus

+

Geographic Region

+

USA: NY

+

Host

+

Submitters

+

Applied Filters:

Virus (1)

Genotype (1)

Geographic Region (1)

Proteins (1)

Nucleotide (42)

Protein (42)

RefSeq Genome (0)

Select Columns

<input type="checkbox"/>	Accession	Organism Name	Submitters	Organization	Release Date	Isolate	Species	Length	Nuc Completeness	Geo Location	Host
<input type="checkbox"/>	OR818561	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25	NYCVH-22-8477	Alphainfluenzavirus influ...	1751	partial	USA: New York	
<input type="checkbox"/>	OR818637	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25		Alphainfluenzavirus influ...	1751	partial	USA: New York	
<input type="checkbox"/>	OR818684	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25	NYCVH-22-9190	Alphainfluenzavirus influ...	1751	partial	USA: New York	
<input type="checkbox"/>	OR819057	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25	NYCVH-160820	Alphainfluenzavirus influ...	1751	partial	USA: New York	
<input type="checkbox"/>	OR819337	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25		Alphainfluenzavirus influ...	1720	partial	USA: New York	
<input type="checkbox"/>	OR858836	Influenza A virus	Meade,P.S., et al.	Icahn School of Medicine ...	2024-04-25	NYCVH-23-453	Alphainfluenzavirus influ...	1751	partial	USA: New York	
<input type="checkbox"/>	QQ958756	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-005647-001	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958764	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-005647-002	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958772	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-009324-002	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958780	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-009324-009	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958788	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-010200-002	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958796	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-010200-003	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958804	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-010321-001	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958812	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-010321-002	Alphainfluenzavirus influ...	1704	partial	USA: New York	
<input type="checkbox"/>	QQ958820	Influenza A virus	Youk,S., et al.	United States Department...	2023-08-23	22-010321-003	Alphainfluenzavirus influ...	1704	partial	USA: New York	

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