

Nucleoprotein/NP Protein, Influenza A virus H1N1 (His-SUMO)

Cat. No.:	HY-P72284
Synonyms:	SARS-CoV coronavirus NP Protein; SARS-CoV np Protein; SARS-CoV novel coronavirus Nucleoprotein Protein
Species:	Virus
Source:	E. coli
Accession:	P18071 (M1-N498)
Gene ID:	/
Molecular Weight:	Approximately 72.1kDa

PROPERTIES

AA Sequence

M A S Q G T K R S Y	E Q M E T D G D R Q	N A T E I R A S V G	K M I D G I G R F Y
I Q M C T E L K L S	D Y E G R L I Q N S	L T I E R M V L S A	F D E R R N K Y L E
E H P S A G K D P K	K T G G P I Y K R V	D G K W M R E L V L	Y D K E E I R R I W
R Q A N N G D D A T	A G L T H M M I W H	S N L N D T T Y Q R	T R A L V R T G M D
P R M C S L M Q G S	T L P R R S G A A G	A A V K G V G T M V	M E L I R M I K R G
I N D R N F W R G E	N G R K T R I A Y E	R M C N I L K G K F	Q T A A Q R A M M D
Q V R E S R N P G N	A E I E D L I F L A	R S A L I L R G S V	A H K S C L P A C V
Y G P A V A S G Y D	F E K E G Y S L V G	I D P F K L L Q N S	Q V Y S L I R P N E
N P A H K S Q L V W	M A C N S A A F E D	L R V S S F I R G T	K V I P R G K L S T
R G V Q I A S N E N	M D T M G S S T L E	L R S R Y W A I R T	R S G G N T N Q Q R
A S A G Q I S I Q P	T F S V Q R N L P F	D K T T I M A A F T	G N A E G R T S D M
R A E I I R M M E S	A R P E E V S F Q G	R G V F E L S D E R	A A N P I V P S F D
M S N E G S Y F F G	D N A E E Y D N		

Appearance

Lyophilized powder.

Formulation

Lyophilized from a 0.2 µm sterile filtered PBS, 6% Trehalose, pH 7.4.

Endotoxin Level

<17 EU/µg, determined by LAL method.

Reconstitution

It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH₂O.

Storage & Stability

Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping

Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The nucleoprotein (NP) protein plays a crucial role in viral replication by encapsidating the negative strand viral RNA, providing protection against nucleases. This encapsidated genomic RNA forms the ribonucleoprotein (RNP), which serves as a template for transcription and replication. To initiate the infectious cycle, the RNP needs to be localized in the host nucleus, but its large size prevents diffusion through the nuclear pore complex. NP contains two nuclear localization signals that actively facilitate RNP import into the nucleus via the cellular importin alpha/beta pathway. During later stages of infection, nuclear export of RNPs is mediated by viral proteins NEP, which interacts with M1, binding to nucleoproteins. There is a possibility that nucleoprotein directly binds to host exportin-1/XPO1 and actively participates in RNPs nuclear export. M1's interaction with RNP appears to conceal nucleoprotein's nuclear localization signals. However, upon infecting a new cell, M1 dissociates from the RNP due to acidification of the virion driven by M2 protein. This dissociation unveils nucleoprotein's nuclear localization signals, leading to targeted RNP transport into the nucleus. Additionally, nucleoprotein forms homomultimers to create the nucleocapsid and may bind to host exportin-1/XPO1. Protein-RNA interactions involve a combination of electrostatic interactions between positively charged residues and the phosphate backbone, as well as planar interactions between aromatic side chains and bases.

Caution: Product has not been fully validated for medical applications. For research use only.

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