

Product Data Sheet

**Cat#** SP-86621-1

**Description:** Influenza A M2 coat protein (22 - 46) (AA: Ser-Ser-Asp-Pro-Leu-Val-Val-Ala-Ala-Ser-Ile-Ile-Gly-Ile-Leu-His-Leu-Ile-Leu-Trp-Ile-Leu-Asp-Arg-Leu) (MW: 2728.34)

**Size:** 1 mg

**Purity:** >95%

**Store:** Desiccated at -20oC.

In influenza A virus M2 protein unit consists of three protein segments comprising 97 amino acid residues: (i) an extracellular N-terminal domain (residues 1–23); (ii) a trans membrane (TM) domain (residues 24–46); (iii) an intracellular C-terminal domain (residues 47–97). The TM domain forms the pore of the ion channel. The M2 protein is a proton-selective ion channel protein, integral in the viral envelope of the influenza A virus. The channel itself is a homotetramer (consists of four identical M2 units), where the units are helices stabilized by two disulfide bonds. It is activated by low pH. M2 protein is encoded on the seventh RNA segment together with the matrix protein M1. Proton conductance by the M2 protein in influenza A is essential for viral replication and assembly.

The M2 protein has an important role in both the early and late replication cycle of the influenza A virus. The proton channel activity of M2 is essential for viral. Histidine residues at position 37 are responsible for this proton selectivity and pH modulation. The M2 proton channel maintains pH across the viral membrane during cell entry and across the trans-Golgi membrane of infected cells during viral maturation. As virus enters the host cell by receptor mediated endocytosis, endosomal acidification occurs. This low pH activates the M2 channel. M2 now brings protons into the virion core. Acidification of virus interior, leads to weakening of electrostatic interaction and leads to dissociation between M1 (matrix protein) and viral ribonucleo protein (RNP) complexes. Subsequent membrane fusion releases the uncoated RNPs into the cytoplasm which is imported to the nucleus to start viral replication. After its synthesis within the infected host cell, M2 is inserted into the endoplasmic reticulum (ER) and transported to the cell surface via trans-Golgi network (TGN). Within the acidic TGN, M2 transports H<sup>+</sup> ions out of the lumen, and maintains hemagglutinin(HA) metastable configuration. At its TGN localization, M2 protein's ion channel activity has been shown to effectively activate the NLRP3 inflammasome pathway.

Other important functions of M2 are its role in formation of filamentous strains of influenza, membrane scission and the release of the budding virion. M2 stabilizes the virus budding site, and mutations of M2 that prevent its binding to M1 can impair filament formation at the site of budding.

**Reference:**

Mould JA *Journal of Biological Chemistry* 275 (12): 8592–8599; Ichinohe T (2010). *J. Cell Biol.* 133 (4): 733–747; Rossman JS, *J Virol.* 2010 May;84(10): 5078–5088.

**Related items:**

Catalog#	ProdDescription
SP-53126-5	Influenza HA (307 - 319) (AA: Pro-Lys-Tyr-Val-Lys-Gln-Asn-Thr-Leu-Lys-Leu-Ala-Thr) (MW: 1503.82)
SP-56844-5	Influenza HA (518 - 526) (AA: Ile-Tyr-Ser-Thr-Val-Ala-Ser-Ser-Leu) (MW: 940.07)
SP-58255-5	Influenza A NP (366 - 374) Strain A/NT/60/68 (AA: Ala-Ser-Asn-Glu-Asn-Met-Asp-Ala-Met) (MW: 982.06)
SP-64000-5	Influenza HA (110 - 120) (AA: Ser-Phe-Glu-Arg-Phe-Glu-Ile-Phe-Pro-Lys-Glu) (MW: 1428.62)
SP-64021-5	Influenza NP (147 - 155) (AA: Thr-Tyr-Gln-Arg-Thr-Arg-Ala-Leu-Val) (MW: 1107.29)
SP-68060-5	Influenza A NP (366 - 374) Strain A/PR/8/35 (AA: Ala-Ser-Asn-Glu-Asn-Met-Glu-Thr-Met) (MW: 1026.12)
SP-68061-5	PA (224–233), Influenza (AA: Ser-Ser-Leu-Glu-Asn-Phe-Arg-Ala-Tyr-Val) (MW: 1185.31)
SP-83168-5	NS2(114 - 121), Influenza (AA: Arg-Thr-Phe-Ser-Phe-Gln-Leu-Ile) (MW: 1011.20)
SP-83170-5	PB1(703 - 711), Influenza (AA: Ser-Ser-Tyr-Arg-Arg-Pro-Val-Gly-Ile) (MW: 1034.19)
SP-86614-5	Influenza NP (50 - 57) (AA: Ser-Asp-Tyr-Glu-Gly-Arg-Leu-Ile) (MW: 952.04)
SP-86615-5	Influenza NP (482 - 489) (AA: Ser-Asn-Glu-Gly-Ser-Tyr-Phe-Phe) (MW: 949.98)
SP-86616-5	Influenza HA (529 - 537) (AA: Ile-Tyr-Ala-Thr-Val-Ala-Gly-Ser-Leu) (MW: 894.04)
SP-86617-5	Influenza HA (210 - 219) (AA: Thr-Tyr-Val-Ser-Val-Gly-Thr-Ser-Thr-Leu) (MW: 1027.15)
SP-86618-5	Influenza HA (204 - 212) (AA: Leu-Tyr-Gln-Asn-Val-Gly-Thr-Tyr-Val) (MW: 1056.19)
SP-86619-5	Influenza HA (110 - 119) (AA: Ser-Phe-Glu-Arg-Phe-Glu-Ile-Phe-Pro-Lys) (MW: 1299.50)
SP-86620-5	Influenza A NP (366 - 374) (AA: Ala-Ser-Asn-Glu-Met-Asn-Asp-Ala-Met) (MW: 982.06)
SP-86621-1	Influenza A M2 coat protein (22 - 46) (AA: Ser-Ser-Asp-Pro-Leu-Val-Val-Ala-Ala-Ser-Ile-Ile-Gly-Ile-Leu-His-Leu-Ile-Leu-Trp-Ile-Leu-Asp-Arg-Leu) (MW: 2728.34)
SP-88515-1	Hemagglutinin (48-68) / Influenza virus (AA: Thr-Gly-Lys-Ile-Cys-Asn-Asn-Pro-His-Arg-Ile-Leu-Asp-Gly-Ile-Asp-Cys-Thr-Leu-Ile-Asp) (MW: 2311.67)

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