

Certificate of Analysis for NR-34588

H1 Hemagglutinin (HA) Protein with C-Terminal Histidine Tag from Influenza Virus, A/St. Petersburg/100/2011 (H1N1)pdm09, Recombinant from Baculovirus

Catalog No. NR-34588

This reagent is the tangible property of the U.S. Government.

Product Description: A recombinant form of the H1 hemagglutinin (HA) protein from influenza virus A/St. Petersburg/100/2011 (H1N1)pdm09 was produced by baculovirus infection of *Trichoplusia ni* insect larvae and purified by standard chromatographic methods.

Lot: 60713594

Manufacturing Date: 16JUN2012

TEST (Required)	SPECIFICATIONS	RESULTS
SDS-PAGE (Coomassie Blue Densitometry)	HA bands (HA0, HA1, HA2) account for > 90% of total density	HA bands (HA0, HA1, HA2) account for 91.3% of total density (Figure 1)
Concentration by Bicinchoninic Acid Protein Assay	Report results	0.95 mg per mL
Final Product Quantity per vial	0.1 mg (\pm 10%) per vial	0.1 mg (\pm 10%) per vial
Hemagglutination Titer with 0.5% Chicken Red Blood Cells	Report results	1024 ¹
Western Blot Anti-histidine monoclonal antibody ²	Report results	Reactive with HA0 and HA2 (Figure 2)
Demonstration of Protein Glycosylation	Size reduction of protein observed on SDS-PAGE when treated with de-glycosylating enzymes N-glycosidase F	Size reduction of protein observed on SDS-PAGE when treated with de-glycosylating enzyme N-glycosidase F (Figure 3)
Filtration	0.22 μ m filtered	0.22 μ m filtered
Bioburden	Report results	< 1 colony-forming unit per mL
Endotoxin Content	Report results	< 0.5 EU per mL

¹Highest dilution of protein that showed hemagglutination activity

²Novagen® 70796-4 (IgG₁)

Date: 14 MAY 2013

Signature:

Dorothy C. Young

Title: Technical Manager, BEI Authentication or designee

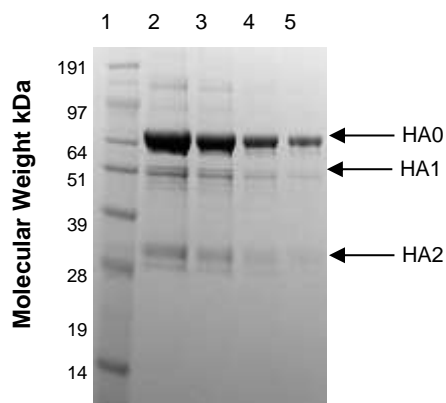
ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected by the contractor to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

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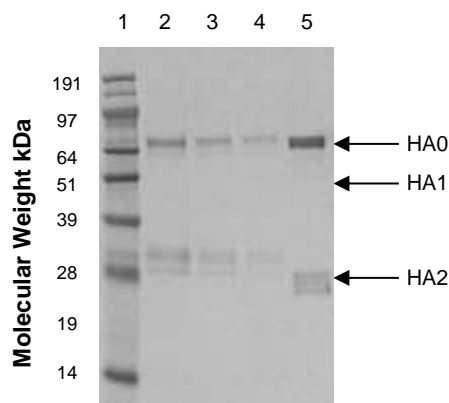


Figure 1 – SDS-PAGE



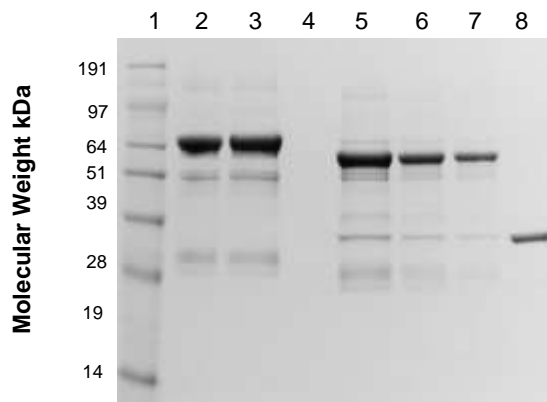
Lane 1: SeeBlue® Plus2 MW marker
(Invitrogen™ LC5925)
Lane 2: 10.0 µg NR-34588
Lane 3: 5.0 µg NR-34588
Lane 4: 2.5 µg NR-34588
Lane 5: 1.25 µg NR-34588

Figure 2 – Western Blot with Monoclonal Anti-Histidine Tag



Lane 1: SeeBlue® Plus2 MW marker
(Invitrogen™ LC5925)
Lane 2: 1.0 µg NR-34588
Lane 3: 0.5 µg NR-34588
Lane 4: 0.25 µg NR-34588
Lane 5: 0.5 µg positive control

Figure 3 – Glycan Analysis



Lane 1: SeeBlue® Plus2 MW marker
(Invitrogen™ LC5925)
Lane 2: 5 µg NR-34588
Lane 3: 5 µg NR-34588 Neg. PNGaseF
Lane 4: Blank
Lane 5: 5 µg NR-34588, PNGaseF Digest
Lane 6: 2.5 µg NR-34588, PNGaseF Digest
Lane 7: 1.25 µg NR-34588, PNGaseF Digest
Lane 8: PNGaseF Enzyme