



Sino Biological Inc.
Biological Solution Specialist

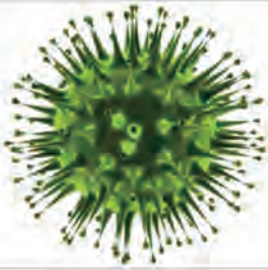
Influenza Virus Research Tools

Protein / Antibody / Gene / ELISA Kit / Cell lysate

INFLUENZA



Recombinant protein & Antibody



- ☑ More than 2200 research reagent
- ☑ 58 subtypes, 224 strains
- ☑ HA (HA0,HA1,HA2,HA), NA, NP, M1, M2, NS1, NS2, PB1, PB2, PA

Strains – vaccine strain/ HPAI strain/high attention strain/new strain

Subtype	Vaccine strain	Example of product			
		HA	HA1	HA2	HA0
H1N1	A/Taiwan/1/86 (1990-92)	40131-V08B			
H1N1	A/Texas/36/91 (1992-97)		40132-V08H1		
H1N1	A/Beijing/262/95 (1998-00)	40133-V08B	40133-V08H1		
H1N1	A/Solomon Islands/3/2006 (2007-2008)	11708-V08H, 11708-V08B	11708-V08H1		
H1N1	A/New Caledonia/20/99 (2000-2007)	11683-V08H	11683-V08H1		
H1N1	A/Brisbane/59/2007 (2008-2010)	11052-V08H	11052-V08H1		
H1N1	A/California/7/2009 (2010-2016)	11085-V08H, 11085-V08B			
H3N2	A/Moscow/10/99 (2001-2004)	40154-V08B	40154-V08H1		
H3N2	A/Fujian/411/2002 (2004-2005)	40120-V08B	40488-V08H1		
H3N2	A/California/7/2004 (2005-2006)	40118-V08B	40118-V08H1		
H3N2	A/Wisconsin/67/2005 (2006-2008)	11972-V08H, 11972-V08B	11972-V08H1		
H3N2	A/Brisbane/10/2007 (2008-2010)	11056-V08H, 11056-V08B	11056-V08H1		
H3N2	A/Perth/16/2009 (2010-2012)	40043-V08H, 40043-V08B1	40043-V08H1		40043-VNAB
H3N2	A/Victoria/361/2011 (2012-2014)	40145-V08B	40145-V08H1		
H3N2	A/Texas/50/2012 (2014-2015)	40354-V08B	40354-V08H1		
B	B/Yamagata/16/88 (1990-91)	40157-V08B	40157-V08H1		
B	B/Malaysia/2506/2004 (2006-2008)	11716-V08H, 11716-V08B	11716-V08H1		
B	B/Florida/4/2006 (2008-2009)	11053-V08H	11053-V08H1	11053-V04H2, 11053-V01H2	
B	B/Brisbane/60/2008 (2009-2012)	40016-V08H, 40016-V08B	40016-V08H1		
B	B/Phuket/3073/2013 (2015-2016)		40498-V08H1		

Subtypes – H1-H18, N1-N11, Influenza B

H1n1	H1n2	H1n3	H1n8	H1n9	H2n2	H2n3	H2n8	H3n1	H3n2
H3n8	H4n2	H4n4	H4n6	H4n8	H5n1	H5n2	H5n3	H5n6	H5n8
H5n9	H6n1	H6n2	H6n4	H6n5	H6n6	H6n8	H7n1	H7n2	H7n3
H7n7	H7n8	H7n9	H8n4	H9n1	H9n2	H9n5	H9n8	H10n3	H10n4
H10n7	H10n8	H10n9	H11n2	H11n6	H11n9	H12n1	H12n3	H12n5	H13n6
H13n8	H14n5	H15n2	H15n8	H16n3	H17n10	H18n11	Influenza B		

Emergency development – Strong R&D and Manufacture Capability

Rapid Development of H7N9 HA Proteins in 12 days

Rapid Preclinical Development of H7N9 Neutralizing Antibody in 6 months

Recombinant protein & Antibody

Recombinant HA protein

– Full length HA protein-HA0

Cat No.	subtype	strain
11055-VNAB	H1N1	A/California/04/2009
40043-VNAB	H3N2	A/Perth/16/2009
40153-VNAB	H3N2	A/Babol/36/2005
40497-VNAB	H3N2	A/Switzerland/9715293/2013
40359-VNAB	H10N8	A/Jiangxi-Donghu/346/2013
40191-VNAB	Influenza B	B/Massachusetts/03/2010
40498-VNAB	Influenza B	B/PHUKET/3073/2013

– HA-specific B cell probe

Cat No	subtype	strain
11055-V08B1	H1N1	A/California/4/2009
11683-V08B1	H1N1	A/New Caledonia/20/99
40043-V08B1	H3N2	A/Perth/16/2009
11060-V08B1	H5N1	A/Indonesia/5/2005

– High hemagglutination activity

HA titer is as low as 0.2- 0.8 ng/mL for 1% RBC, for example:

Cat No	subtype	strain
11055-V08B	H1N1	A/California/04/2009
40015-V08H	H5N1	A/Hubei/1/2010
40172-V08B	H7N8	A/mallard/Netherlands/33/2006
40174-V08B	H9N2	A/Hong Kong/35820/2009
40184-V08B	H10N3	A/mallard/Minnesota/Sg-00194/2007
40359-V08B	H10N8	A/Jiangxi-Donghu/346/2013
40191-V08B	B	B/Massachusetts/03/2010

– Binding activity

Bind with Neu5Aca2-6GalNAca-PAA-biotin or Neu5Aca2-3Galb1-4GlcNAcb-PAA-biotin, for example:

Cat No	subtype	strain
40118-V08B	H3N2	A/California/7/2004
40123-V08B	H7N9	A/Hangzhou/3/2013
40325-V08B	H7N9	A/Zhejiang/DTID-ZJU10/2013

Recombinant NA protein

– High enzymatic activity

The activity is as high as 3000 pmol/min/μg

Cat No	subtype	strain
40196-VNAHC	H1N1	A/Puerto Rico/8/1934
40235-VNAHC	H4N6	A/mallard/Ohio/657/2002
40045-VNAHC	H5N1	A/Egypt/2321-NAMRU3/2007
40202-VNAHC	H7N7	A/Netherlands/219/03
40108-VNAHC	H7N9	A/Anhui/1/2013
40109-VNAHC	H7N9	A/Shanghai/1/2013
40034-VNAHC	H9N2	A/Chicken/Hong Kong/G9/97

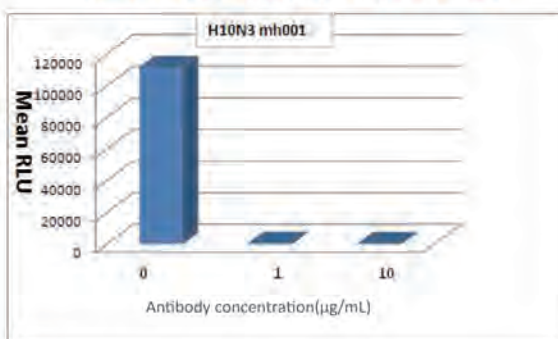
– Drug-resistant NA mutant

Cat No	subtype	Mutation site	enzymatic activity
11058-VNAHC1	H1N1	H274Y mutation	Active
11058-VNAHC2	H1N1	N295S mutation	Active
11676-VNAHC1	H5N1	H274Y mutation	Active
40017-VNAHC1	H3N2	E119V mutation	Active
40017-VNAHC2	H3N2	N294S mutation	Active
40017-VNAHC3	H3N2	R292K mutation	Active
40017-VNAHC4	H3N2	H274Y mutation	Active

Recombinant NA protein

Neutralizing antibodies

– Anti HA of H1, H3, H5, H7, H10



H10N8 A/Jiangxi-Donghu/346/2013 pseudovirus infection in 293FT cells. The inhibition is 99.3% under 1 μg/mL antibody (40359-mh001).

Neutralizing antibodies

– Catalog: 11082-R002

The minimum concentration of antibody to stop hemagglutination is 0.16 μg/mL after being pre-incubated with 1 unit* of H7N9 HA protein(40105-V08B)

Broad-spectrum antibodies

– Anti-influenza HA : 86001-RM01

- Cross reactivity with HA protein covering over 80 strains
- Binding to H1-H16

– Anti-influenza NP: 11675-RP01, 11675-RP02

- Cross reactivity with NP protein among Influenza A
- High sensitivity

Multiple applications

ELISA Kit & ELISA pair set & Gene

High sensitivity

The minimum detectable dose of Influenza HA is typically less than 3 pg/mL

High stability

Capture antibody and detection antibody are monoclonal antibodies

Category	catalog	species	molecule	capture Ab	detection Ab
ELISA kit	KIT11684	H1N1	HA	mouse monoclonal antibody	mouse monoclonal antibody
ELISA kit	KIT11055	H1N1	HA	mouse monoclonal antibody	rabbit polyclonal antibody
ELISA kit	KIT11056	H3N2	HA	rabbit monoclonal antibody	mouse monoclonal antibody
ELISA kit	KIT11714	H4N6	HA	mouse monoclonal antibody	mouse monoclonal antibody
ELISA kit	KIT40103	H7N9	HA	rabbit monoclonal antibody	rabbit polyclonal antibody
ELISA kit	KIT40104	H7N9	HA	rabbit monoclonal antibody	rabbit polyclonal antibody
pair set	SEK11684	H1N1	HA	monoclonal antibody	monoclonal antibody
pair set	SEKA11684	H1N1	HA	monoclonal antibody	monoclonal antibody
pair set	SEK001	H1N1	HA	monoclonal antibody	polyclonal antibody
pair set	SEK11056	H3N2	HA	monoclonal antibody	monoclonal antibody
pair set	SEK11714	H4N6	HA	monoclonal antibody	monoclonal antibody
pair set	SEK002	H5N1	HA	monoclonal antibody	polyclonal antibody
pair set	SEK11082	H7N7	HA	monoclonal antibody	polyclonal antibody
pair set	SEK40103	H7N9	HA	monoclonal antibody	polyclonal antibody
pair set	SEK40104	H7N9	HA	monoclonal antibody	polyclonal antibody
pair set	SEK11229	H9N2	HA	monoclonal antibody	polyclonal antibody
pair set	SEK11053	Influenza B	HA	monoclonal antibody	polyclonal antibody

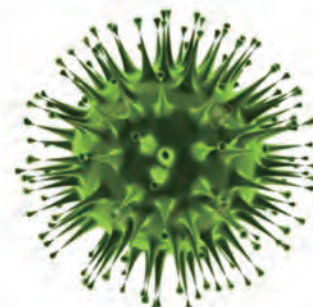
Multiple tags

GFP spark tag, OFP spark tag, Flag tag, His tag, Myc tag

High quality

- Condon optimization for more efficient expression
- Sequence verified
- Expression validated

Customized service



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