EliteRmab®

Rabbit Monoclonal Antibody to H7N9 HA / Hemagglutinin

Catalog Number: **11082-R002**

General Information	
Clone ID:	002
Ig Type:	Rabbit IgG
Applications:	ELISA,ELISA(Cap),FCM,B/N,Microneutralizaiton(MN),HemagglutininInhibition(HI) (Antibody's applications have not been validated with corresponding viruses. Optimal concentrations/dilutions should be determined by the end user.)
Specificity:	H7N9 HA / Hemagglutinin
Formulation:	0.2 μm filtered solution in PBS ,pH7.4
Storage:	< -20℃

Storage

This antibody can be stored at 2℃-8℃ for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20℃ to -80℃. **Preservative-Free.**
Sodium azide is recommended to avoid contamination (final concentration 0.05%-0.1%). It is toxic to cells and should be disposed of properly. **Avoid repeated freeze-thaw cycles.**

Applications

ELISA **–** This antibody can be used at 0.1-0.2 μg/mL with the appropriate secondary reagents to detect H7N7 (A/chicken/Netherlands/1/03) HA, H7N7 (A/Netherlands/219/03) HA, H7N9 (A/Anhui/1/2013) HA and H7N9 (A/Shanghai/1/2013) HA in ELISA.

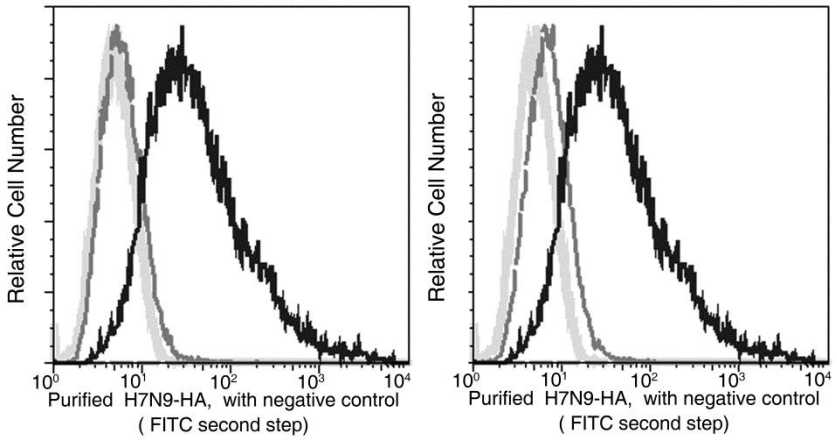
ELISA(Cap): 0.5-4 μg/ml
This antibody will detect Influenza A H7N9 HA / Hemagglutinin in ELISA pair set SEK11082. In a sandwich ELISA, it can be used as capture antibody.

Hemagglutination inhibition (HI) – Serially diluted antibody was pre-incubated with 4 units of hemagglutination titer of HA proteins for 1 hr at room temperature, the concentraion of antibody to stop 1% Guinea pig red cells hemagglutination is measured.

Microneutralizaiton (MN) – The virus microneutralizaiton (MN) test was performed on MDCK cells infected with 100TCID50 of H7N9 A/Anhui/1/2013 virus under the treatment of double dilution of neutralizing antibody, the IC_{50} of antibody 11082-R002 is 0.2 ug/mL.

Flow Cytometry –

FCM: 0.5-2 μg/Test



Flow cytometric analysis of Purified anti-H7N9-HA antibody on 293 transfected cells. 293 cells were transfected with plasmid DNA of H7N7 (A/Netherlands/219/2003) Hemagglutinin (Cat.No. VG11082-G-N), then the cells were collected at 72 hours posttransfection, and the cell surface expression of HA were measured by flowcytometry. The transfected cells stained with Purified Rabbit anti-H7N9-HA (Bold line hisgram, 1 μg /test), To demonstrate specificity of staining, the binding of 11082-R002 was blocked by the preincubation of the purified antibody with molar excess of recombinant Influenza A H7N9 (A/Shanghai/1/2013) Hemagglutinin (Left panel, 5 μg, Cat. No. 40104-V08H),and Influenza A H7N9 (A/Anhui/1/2013) Hemagglutinin (Right panel, 5 μg, Cat. No. 40103-V08H) for 1 hour (Dashed line hisgram), then stained with a FITC-conjugated second step antibody, grey line histogram represented negative control.

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Specificity

H7N9 HA / Hemagglutinin

Has cross-reactivity in ELISA with
H7N9 (A/Hangzhou/1/2013) HA
H7N9 (A/Shanghai/2/2013) HA
H7N9 (A/Hangzhou/3/2013) HA
H7N9 (A/Shanghai/1/2013) HA
H7N9 (A/Anhui/1/2013) HA
H7N9 (A/Pigeon/Shanghai/S1069/2013) HA
H7N9 (A/Shanghai/4664T/2013) HA
H7N9 (A/Zhejiang/DTID-ZJU10/2013) HA
H7N9 (A/Zhejiang/1/2013) HA
H7N3 (A/turkey/Italy/214845/2002) HA
H7N7 (A/Netherlands/219/03) HA
H7N7 (A/chicken/Netherlands/1/03) HA
H7N7 (A/equine/Kentucky/1a/1975) HA
H7N8 (A/mallard/Netherlands/33/2006) HA

No cross-reactivity in ELISA with
H1N1 (A/California/07/2009) HA
H2N2 (A/Canada/720/2005) HA
H3N2 (A/Brisbane/10/2007) HA
H4N6 (A/mallard/Ohio/657/2002) HA
H5N1 (A/Anhui/1/2005) HA
H6N1 (A/northern shoveler/California/HKWF115/2007) HA
H8N4 (A/pintail duck/Alberta/114/1979) HA
H9N2 (A/Hong Kong/1073/99) HA
H10N3 (A/duck/Hong Kong/786/1979) HA
H11N2 (A/duck/Yangzhou/906/2002) HA
H12N5 (A/green-winged teal/ALB/199/1991) HA
H13N8 (A/black-headed gull/Netherlands/1/00) HA
H15N8 (A/duck/AUS/341/1983) HA
H16N3 (A/black-headed gull/Sweden/5/99) HA

Background

H7N9 is a subtype of Influenza virus A. On April 1, 2013, the World Health Organization (WHO) first reported 3 human infections with a new influenza A (H7N9) virus in China. Since then, additional cases have been reported. This new H7N9 virus is an avian (bird) influenza (flu) virus. Influenza (flu) is a respiratory infection in mammals and birds. The virus is divided into three main types (Influenza A, Influenza B, and Influenza C), which are distinguished by differences in two major internal proteins (hemagglutinin (HA) and neuraminidase (NA).
Influenza A is further divided into subtypes based on differences in the membrane proteins hemagglutinin (HA) and neuraminidase (NA), which are the most important targets for the immune system. The notation HhNn is used to refer to the subtype comprising the hth discovered Hemagglutinin (HA) protein and the nth discovered neuraminidase (NA) protein. The influenza viral Hemagglutinin (HA) protein is a homo trimer with a receptor binding pocket on the globular head of each monomer.
The influenza virus Hemagglutinin (HA) protein is translated in cells as a single protein, HA0, or hemagglutinin precursor protein. For viral activation, hemagglutinin precursor protein (HA0) must be cleaved by a trypsin-like serine endoprotease at a specific site, normally coded for by a single basic amino acid (usually arginine) between the HA1 and HA2 domains of the protein. After cleavage, the two disulfide-bonded protein domains produce the mature form of the protein subunits as a prerequisite for the conformational change necessary for fusion and hence viral infectivity.

Reference

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2. Suzuki T. et al., 2005, J Virol. 79: 11705-15.
3. Shinya K. et al., 2006, Nature. 440 (7083): 435-6.
4. Marjuki H. et al., 2006, J Biol Chem. 281: 16707-15.
5. Christophe F. et al., 2009, Science. 324: 1557-61.
6. Von Itzstein M. 2007, Nat Rev Drug Discov. 6: 967-74.