

SUMMARY OF THE INVENTION

The present ~~disclosureinvention~~ provides anti-influenza B virus hemagglutinin antibodies (*i.e.*, anti-hemagglutinin antibodies, anti-influenza B virus antibodies), compositions comprising anti-influenza B virus hemagglutinin antibodies, and methods of using the same.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:61;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:64 and 65;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:75;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In one aspect, there is provided an isolated anti-hemagglutinin monoclonal antibody that specifically binds influenza B virus hemagglutinin comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:61;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:64 and 65;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:75;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In some embodiments, the ~~disclosureinvention~~ provides an isolated anti-hemagglutinin antibody comprising: at least one, two, three, four, five and/or six hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:61;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:64 and 65;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:75;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NOs:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In some embodiments, the ~~disclosureinvention~~ provides an isolated anti-hemagglutinin antibody comprising three light chain hypervariable regions (HVR-L1, HVR-L2, and LVR-L3), wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:61;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:64 and 65; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:75.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three light chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three heavy chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:61;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:64 and 65; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:75.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:79 and 83, and the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:78, 82, and 86.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a light chain variable region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:78, 82, and 86.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises a heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:79 and 83.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises a heavy chain and a light chain, wherein the heavy chain comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:81, 85, and 88, and the light chain comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:80, 84, and 87.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises a light chain comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:80, 84, and 87.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises a heavy chain comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:81, 85, and 88.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosureinvention~~ comprises three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:62;
- (b) HVR-H2 comprises the amino acid sequence of SEQ ID NO:66;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:76;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In one aspect, there is provided an isolated anti-hemagglutinin monoclonal antibody that specifically binds influenza B virus hemagglutinin comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:62;
- (b) HVR-H2 comprises the amino acid sequence of SEQ ID NO:66;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:76;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

In some embodiments, the ~~disclosureinvention~~ provides an isolated anti-hemagglutinin antibody comprising: at least one, two, three, four, five and/or six hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:62;
- (b) HVR-H2 comprises the amino acid sequence of SEQ ID NO:66;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:76;

- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

5 | In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising three light chain hypervariable regions (HVR-L1, HVR-L2, and LVR-L3), wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- 10 | (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

| In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3), wherein:

- 15 | (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:62;
- (b) HVR-H2 comprises the amino acid sequence of SEQ ID NO:66; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:76.

| In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three light chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:55;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:57; and
- 20 | (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:59.

| In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three heavy chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:62;
- 30 | (b) HVR-H2 comprises the amino acid sequence of SEQ ID NO:66; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:76.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a heavy chain variable region and a light chain variable region, wherein the heavy

chain variable region comprises the amino acid of SEQ ID NO:89, and the light chain variable region comprises the amino acid sequence of SEQ ID NO:78.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:78.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a heavy chain variable region comprises the amino acid sequence of SEQ ID NO:89.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a heavy chain and a light chain, wherein the heavy chain comprises the amino acid sequence of SEQ ID NO:90, and the light chain comprises the amino acid sequence of SEQ ID NO:80.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a light chain comprising the amino acid sequence of SEQ ID NO:80.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises a heavy chain comprising the amino acid sequence of SEQ ID NO:90.

In some embodiments, an isolated anti-hemagglutinin antibody of the present ~~disclosure~~invention comprises three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:63;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:67, 68, 69, 70, 71, 72, 73, and 74;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:77;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:56;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:58; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:60.

In one aspect, there is provided an isolated anti-hemagglutinin monoclonal antibody that specifically binds influenza B virus hemagglutinin comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3) and three light chain hypervariable regions (HVR-L1, HVR-L2, and HVR-L3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:63;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:67, 68, 69, 70, 71, 72, 73, and 74;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:77;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:56;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:58; and
- (f) HVR-L3 comprises the amino acid sequence of SEQ ID NO:60.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, three, four, five and/or six hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:63;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:67, 68, 69, 70, 71, 72, 73, and 74;
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:77;
- (d) HVR-L1 comprises the amino acid sequence of SEQ ID NO:56;
- (e) HVR-L2 comprises the amino acid sequence of SEQ ID NO:58; and
- (f) HVR-L3 comprises the amino acid sequence se of SEQ ID NO:60.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising three light chain hypervariable regions (HVR-L1, HVR-L2, and LVR-L3), wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:56;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:58; and
- (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:60.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising three heavy chain hypervariable regions (HVR-H1, HVR-H2, and HVR-H3), wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:63;
- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:67, 68, 69, 70, 71, 72, 73, and 74; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:77.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three light chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-L1 comprises the amino acid sequence of SEQ ID NO:56;
- (b) HVR-L2 comprises the amino acid sequence of SEQ ID NO:58; and
- (c) HVR-L3 comprises the amino acid sequence of SEQ ID NO:60.

In some embodiments, the ~~disclosure~~invention provides an isolated anti-hemagglutinin antibody comprising: at least one, two, and/or three heavy chain hypervariable region (HVR) sequences, wherein:

- (a) HVR-H1 comprises the amino acid sequence of SEQ ID NO:63;

- (b) HVR-H2 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:67, 68, 69, 70, 71, 72, 73, and 74; and
- (c) HVR-H3 comprises the amino acid sequence of SEQ ID NO:77.

5 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a heavy chain variable region and a light chain variable region,
wherein the heavy chain variable region comprises an amino acid sequence selected from the
group consisting of SEQ ID NOs:92, 95, 97, 99, 101, 103, 105, and 107, and the light chain
variable region comprises the amino acid sequence of SEQ ID NO:91.

10 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a light chain variable region comprising the amino acid
sequence of SEQ ID NO:91.

15 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a heavy chain variable region comprises an amino acid sequence
selected from the group consisting of SEQ ID NOs: 92, 95, 97, 99, 101, 103, 105, and 107.

20 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a heavy chain and a light chain, wherein the heavy chain
comprises an amino acid sequence selected from the group consisting of SEQ ID NOs:94, 96,
98, 100, 102, 104, 106, and 108, and the light chain comprises the amino acid sequence of SEQ
ID NO:93.

25 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a light chain comprising the amino acid sequence of SEQ ID
NO:93.

30 In some embodiments, an isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ comprises a heavy chain comprising an amino acid sequence selected from
the group consisting of SEQ ID NOs:94, 96, 98, 100, 102, 104, 106, and 108.

35 In some embodiments, the isolated anti-hemagglutinin antibody of the present
| ~~disclosureinvention~~ is a monoclonal antibody. In some embodiments, the isolated anti-
hemagglutinin antibody of the present ~~disclosureinvention~~ specifically binds influenza B virus
hemagglutinin. In some embodiments, the isolated anti-hemagglutinin antibody is an isolated
anti-hemagglutinin monoclonal antibody that specifically binds influenza B virus
hemagglutinin.

~~The invention also provides~~In one aspect, there is provided an isolated nucleic acids encoding an anti-hemagglutinin antibody of the present ~~disclosureinvention~~. The ~~disclosureinvention~~ also provides vectors comprising a nucleic acid encoding an anti-hemagglutinin antibody of the present ~~disclosureinvention~~. The ~~disclosureinvention~~ also provides host cells comprising a nucleic acid or a vector of the present ~~disclosureinvention~~. In one aspect, there is provided a host cell comprising the nucleic acid of the disclosure. A vector can be of any type, for example, a recombinant vector such as an expression vector. Any of a variety of host cells can be used. In one embodiment, a host cell is a prokaryotic cell, for example, *E. coli*. In another embodiment, a host cell is a eukaryotic cell, for example, a mammalian cell, such as a Chinese Hamster Ovary (CHO) cell.

The ~~disclosureinvention~~ further provides a method of producing an anti-hemagglutinin antibody of the present ~~disclosureinvention~~. For example, the ~~disclosureinvention~~ provides methods for making an anti-hemagglutinin antibody (which, as defined herein, includes full length antibody and fragments thereof), the method comprising expressing in a suitable host cell a recombinant vector of the ~~disclosureinvention~~ encoding the anti-hemagglutinin antibody or fragments thereof so that the antibody or fragments thereof are produced. In some embodiments, the method comprises culturing a host cell comprising nucleic acid encoding an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ (or fragments thereof) so that the nucleic acid is expressed. The method may further comprise recovering the anti-hemagglutinin antibody or fragments thereof from the host cell culture or the host cell culture medium.

~~In one aspect, there is provided a method of producing an antibody comprising culturing the host cell of the disclosure so that the antibody is produced.~~

The ~~disclosureinvention~~ also provides a pharmaceutical formulation comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ and a pharmaceutically acceptable carrier. The pharmaceutical formulation may further comprise an additional therapeutic agent (e.g., a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

~~The invention also provides~~In one aspect, there is provided a compositions comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~. The composition may further comprise an additional therapeutic agent (e.g., a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

~~In one aspect, there is provided a pharmaceutical composition comprising the antibody of the disclosure and a pharmaceutically acceptable carrier.~~

The ~~disclosureinvention~~ also provides a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in preventing influenza B virus infection.

In some embodiments, the

~~disclosureinvention~~ provides a pharmaceutical composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in preventing influenza B virus infection. The ~~disclosureinvention~~ further provides a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in treating influenza B virus infection. In some embodiments, the ~~disclosureinvention~~ provides a pharmaceutical composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in treating influenza B virus infection. The ~~disclosureinvention~~ further provides a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in inhibiting influenza B virus infection. In some embodiments, the ~~disclosureinvention~~ provides a pharmaceutical composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ for use in inhibiting influenza B virus infection.

Compositions comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~ may also be used in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (*e.g.*, a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

The ~~disclosureinvention~~ also provides a method for inhibiting influenza B virus infection, the method comprising administering to a subject in need thereof an effective amount of a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~, thereby inhibiting influenza B virus infection. The ~~disclosureinvention~~ also provides a method for treating influenza B virus infection, the method comprising administering to a subject in need thereof an effective amount of a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~, thereby treating influenza B virus infection. The ~~disclosureinvention~~ also provides a method for preventing influenza B virus infection, the method comprising administering to a subject in need thereof an effective amount of a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~, thereby preventing influenza B virus infection.

The ~~disclosureinvention~~ also provides a method for inhibiting, treating, or preventing influenza B virus infection, the method comprising administering to a patient in need thereof an effective amount of a composition comprising an anti-hemagglutinin antibody of the present ~~disclosureinvention~~, and administering to the patient an effective amount of an additional therapeutic agent, thereby inhibiting, treating, or preventing influenza B virus infection. In some embodiments, the

additional therapeutic agent is a neuraminidase inhibitor, such as oseltamivir or zanamivir. In other embodiments, the additional therapeutic agent is another anti-hemagglutinin antibody. In yet other embodiments, the additional therapeutic agent is an anti-M2 antibody. In various aspects-embodiments of such combination treatments, the therapeutic agents are administered at about the same time, are administered together, or are administered sequentially or consecutively. In particular embodiments, an anti-neuraminidase inhibitor is administered prior to the administration of an anti-hemagglutinin antibody of the present disclosureinvention. In some embodiments, the anti-influenza B virus hemagglutinin antibodies of the present disclosureinvention are effective at neutralizing, inhibiting, treating, or preventing influenza B virus infection from influenza B virus strains of different lineages, including ancestral, Yamagata, and Victoria lineages.

In another aspectembodiment, the disclosureinvention provides use of an anti-hemagglutinin antibody of the present disclosureinvention in the manufacture of a medicament.

The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (e.g., a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

In one aspect, there is provided use of the antibody of the disclosure in the manufacture of a medicament for treating, inhibiting, or preventing influenza B virus infection in an individual in need thereof.

In another aspectembodiment, the disclosureinvention provides use of a nucleic acid of the disclosureinvention in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (e.g., a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

In another aspectembodiment, the disclosureinvention provides use of an expression vector of the disclosureinvention in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (e.g., a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

5 In another ~~aspect~~embodiment, the ~~disclosure~~invention provides use of a host cell of the ~~disclosure~~invention in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (*e.g.*, a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

10 In another ~~aspect~~embodiment, the ~~disclosure~~invention provides use of an article of manufacture of the ~~disclosure~~invention in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (*e.g.*, a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

15 In another ~~aspect~~embodiment, the ~~disclosure~~invention provides use of a kit of the ~~disclosure~~invention in the manufacture of a medicament. The medicament may be for use in the inhibition, treatment, or prevention of influenza B virus infection. In certain embodiments, the medicament may further comprise an additional therapeutic agent (*e.g.*, a neuraminidase inhibitor, such as oseltamivir or zanamivir; another antibody, such as another anti-hemagglutinin antibody or an anti-M2 antibody; etc).

20 In various ~~aspects~~embodiments, an anti-hemagglutinin antibody of the present ~~disclosure~~invention binds hemagglutinin of influenza B virus. In other ~~aspects~~embodiments, an anti-hemagglutinin antibody of the present ~~disclosure~~invention binds hemagglutinin and neutralizes influenza B virus. In some embodiments, an anti-hemagglutinin antibody of the present ~~disclosure~~invention neutralizes influenza B virus *in vitro*, *in vivo*, or *in vitro* and *in vivo*.

BRIEF DESCRIPTION OF THE FIGURES

30 Figures 1A and 1B set forth data showing *in vitro* neutralization of various influenza B virus isolates by monoclonal antibody 34B5A and monoclonal antibody 33F8, respectively.

Figure 2 sets forth data showing *in vitro* neutralization of various influenza B virus isolates by monoclonal antibody 46B8A.

35 Figure 3 sets forth data showing the effect of monoclonal antibody 34B5C and monoclonal antibody 46B8C on hemagglutination inhibition.

variable region comprises the amino acid sequence of SEQ ID NO:78, and the heavy chain variable region comprises the amino acid sequence of SEQ ID NO:89.

19. The isolated anti-hemagglutinin antibody of claim 15, wherein the antibody comprises a light chain comprising the amino acid sequence of SEQ ID NO:80.
20. The isolated anti-hemagglutinin antibody of claim 15, wherein the antibody comprises a heavy chain comprising the amino acid sequence of SEQ ID NO:90.
21. The isolated anti-hemagglutinin antibody of claim 15, wherein the antibody comprises a light chain and a heavy chain, wherein the light chain comprises the amino acid sequence of SEQ ID NO:80, and the heavy chain comprises the amino acid sequence of SEQ ID NO:90.
22. ~~A method for treating, inhibiting, or preventing influenza B virus infection in an individual in need thereof, the method comprising administering to the individual an effective amount of a composition comprising~~Use of the antibody of any one of claims 1-21 in the manufacture of a medicament for treating, inhibiting, or preventing influenza B virus infection in an individual in need thereof, thereby treating, inhibiting, or preventing influenza B virus infection.
23. The ~~use~~method of claim 22, wherein the ~~method further comprises administering to the individual~~medicament is to be administered with an additional therapeutic agent.
24. The ~~use~~method of claim 23, wherein the additional therapeutic agent is a neuraminidase inhibitor, an anti-hemagglutinin antibody, or an anti-M2 antibody.
25. A composition comprising the antibody of any one of claims 1-21.
26. A pharmaceutical composition comprising the antibody of any one of claims 1-21 and a pharmaceutically acceptable carrier.
27. An isolated nucleic acid encoding the antibody of any one of claims 1-21.
28. A host cell comprising the nucleic acid of claim 27.

29. A method of producing an antibody comprising culturing the host cell of claim 28 so that the antibody is produced.

~~30. The use of the antibody of any one of claims 1-21 in the manufacture of a medicament.~~

~~31. The use of claim 30, wherein the medicament is for treating, inhibiting, or preventing influenza B virus infection.~~