CLAIMS

1. An isolated human binding molecule capable of specifically recognizing and binding to an epitope in influenza haemagglutinin protein (HA), having neutralizing activity against influenza viruses comprising HA of the H3 subtype, such as H3N2, and having cross-neutralizing activity against at least an influenza virus comprising HA of the H7 subtype, and/or an influenza virus comprising HA of the H10 subtype, wherein the binding molecule binds to an epitope comprising the amino acid at position 19, 25, 27, 33 and/or 34 of the HA2 polypeptide of the H3 HA protein.

2. An isolated binding molecule according to claim 1, capable of specifically recognizing and binding to an epitope in influenza haemagglutinin protein (HA), having neutralizing activity against influenza viruses comprising HA of the H3 subtype, such as H3N2, characterized in that said binding molecule has at least neutralizing activity against one or more of the H3N2 strains selected from the group consisting of A/Wisconsin/67/2005, A/Hiroshima/52/2005, A/Panama/2007/99, and A/Johannesburg/33/94.

3. A binding molecule according to claim 2, wherein said binding molecule further has neutralizing activity against the H3N2 strain A/Hong Kong/1/68.

4. A binding molecule according to any one of claims 1-3, wherein the binding molecule is capable of preventing *in vitro* the trypsin cleavage of the H3 HA precursor molecule HA0 in HA1 and HA2.

5. A binding molecule according to any one of claims 1-4, wherein the binding molecule is capable of preventing the conformational change of the H3 HA protein required for fusion of the viral membrane with the endosomal membrane of an infected cell.

6. A binding molecule according to any one of claims 1-5, wherein the binding molecule is not capable of binding to and neutralizing influenza virus A comprising HA of the H1 subtype, such as H1N1.

7. A binding molecule according to any of the claims 1-6, wherein the binding molecule is selected from the group consisting of:
    a. a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:109, a heavy chain CDR2 region of SEQ ID NO:110, and a heavy chain CDR3 region of SEQ ID NO:111; and a light chain CDR1 region of SEQ ID NO: 112, a light chain CDR2 region of SEQ ID NO: 113 and a light chain CDR3 region of 114,
    b. a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:138, a heavy chain CDR2 region of SEQ ID NO:139, and a heavy chain CDR3 region of SEQ ID NO:140, and a light chain CDR1 region of SEQ ID NO: 141, a light chain CDR2 region of SEQ ID NO: 142 and a light chain CDR3 region of 143,
    c. a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:144, a heavy chain CDR2 region of SEQ ID NO:145, and a heavy chain CDR3 region of SEQ ID NO:146; and a light chain CDR1 region of SEQ ID NO: 147, a light chain CDR2 region of SEQ ID NO: 148 and a light chain CDR3 region of 149.

8. A binding molecule according to any one of claims 1-7, wherein said binding molecule is a human monoclonal antibody.

9. A binding molecule according to any one of claims 1-8 for use as a medicament.

10. A binding molecule according to any one of claims 1-9 for use as a medicament in the diagnostic, therapeutic and/or prophylactic treatment of influenza infection caused by influenza virus comprising HA of the H3 subtype, such as H3N2.

11. A functional variant of a binding molecule according to any one of claims 1-10, characterized in that the functional variant has neutralizing activity against an influenza virus comprising HA of the H3 subtype, such as H3N2.

12. An immunoconjugate comprising a binding molecule according to any one of the claims 1-10, or a functional variant according to claim 11, the immunoconjugate further comprising at least one tag.

13. A pharmaceutical composition comprising a binding molecule according to any one of claims 1-10, and/or a functional variant according to claim 11, and/or an immunoconjugate according to claim 12 and a pharmaceutically acceptable excipient.

14. Use of a binding molecule according to any one of claims 1-10, and/or a functional variant according to claim 11, and/or an immunoconjugate according to claim 12 in the preparation of a medicament for the diagnosis, prophylaxis, and/or treatment of an influenza virus infection.

15. Use according to claim 14 characterized in that of influenza infection is caused by influenza virus comprising HA of the H3 subtype H3, such as H3N2.

16. A pharmaceutical composition according to claim 13 comprising at least one additional binding molecule.

17. A pharmaceutical composition according to claim 16 characterized in that the additional binding molecule is capable of neutralizing influenza virus comprising HA of the H1 and H5 subtype, such as H1N1 and H5N1, or a functional variant thereof.

18. A nucleic acid molecule encoding a binding molecule according to any one of the claims 1-10 or a functional variant according to claim 11.

19. A vector comprising at least one nucleic acid molecule according to claim 18.

20. A host comprising at least one vector according to claim 19.

21. A host according to claim 20, wherein the host is a human cell.

22. A method of producing a binding molecule according to any one of claims 1-10 or a functional variant according to claim 11, wherein the method comprises the steps of: culturing a host according to claim 20 or 21 under conditions conducive to the expression of the binding molecule or functional variant, and optionally, recovering the expressed binding molecule or functional variant.

CLAIMS

1. An isolated human binding molecule capable of specifically recognizing and binding to an epitope in influenza haemagglutinin protein (HA), having neutralizing activity against influenza viruses comprising HA of the H3 subtype, such as H3N2, and having cross-neutralizing activity against at least an influenza virus comprising HA of the H7 subtype, and/or an influenza virus comprising HA of the H10 subtype, wherein the binding molecule binds to an epitope comprising the amino acid at position 19, 25, 27, 33 and/or 34 of the HA2 polypeptide of the H3 HA protein.

2. An isolated binding molecule according to claim 1, capable of specifically recognizing and binding to an epitope in influenza haemagglutinin protein (HA), having neutralizing activity against influenza viruses comprising HA of the H3 subtype, such as H3N2, characterized in that said binding molecule has at least neutralizing activity against one or more of the H3N2 strains selected from the group consisting of A/Wisconsin/67/2005, A/Hiroshima/52/2005, A/Panama/2007/99, and A/Johannesburg/33/94.

3. A binding molecule according to claim 2, wherein said binding molecule further has neutralizing activity against the H3N2 strain A/Hong Kong/1/68.

4. A binding molecule according to any one of claims 1-3, wherein the binding molecule is capable of preventing *in vitro* the trypsin cleavage of the H3 HA precursor molecule HA0 in HA1 and HA2.

5. A binding molecule according to any one of claims 1-4, wherein the binding molecule is capable of preventing the conformational change of the H3 HA protein required for fusion of the viral membrane with the endosomal membrane of an infected cell.

6. A binding molecule according to any one of claims 1-5, wherein the binding molecule is not capable of binding to and neutralizing influenza virus A comprising HA of the H1 subtype, such as H1N1.

7. A binding molecule according to any of the claims 1-6, wherein the binding molecule is selected from the group consisting of:
    a. a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:109, a heavy chain CDR2 region of SEQ ID NO:110, and a heavy chain CDR3 region of SEQ ID NO:111; and a light chain CDR1 region of SEQ ID NO: 112, a light chain CDR2 region of SEQ ID NO: 113 and a light chain CDR3 region of 114,
    b. a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:138, a heavy chain CDR2 region of SEQ ID NO:139, and a heavy chain CDR3 region of SEQ ID NO:140, and a light chain CDR1 region of SEQ ID NO: 141, a light chain CDR2 region of SEQ ID NO: 142 and a light chain CDR3 region of 143,
    a binding molecule comprising a heavy chain CDR1 region of SEQ ID NO:144, a heavy chain CDR2 region of SEQ ID NO:145, and a heavy chain CDR3 region of SEQ ID NO:146; and a light chain CDR1 region of SEQ ID NO: 147, a light chain CDR2 region of SEQ ID NO: 148 and a light chain CDR3 region of 149.

8. A binding molecule according to any one of claims 1-7, wherein said binding molecule is a human monoclonal antibody.

9. A binding molecule according to any one of claims 1-8 for use as a medicament.

10. A binding molecule according to any one of claims 1- 9 for use as a medicament in the diagnostic, therapeutic and/or prophylactic treatment of influenza infection caused by influenza virus comprising HA of the H3 subtype, such as H3N2.

11. An immunoconjugate comprising a binding molecule according to any one of the claims 1-10, the immunoconjugate further comprising at least one tag.

12. A pharmaceutical composition comprising a binding molecule according to any one of claims 1-10, and/or an immunoconjugate according to claim 11 and a pharmaceutically acceptable excipient.

13. Use of a binding molecule according to any one of claims 1-10, and/or an immunoconjugate according to claim 11 in the preparation of a medicament for the diagnosis, prophylaxis, and/or treatment of an influenza virus infection.

14. Use according to claim 13 characterized in that of influenza infection is caused by influenza virus comprising HA of the H3 subtype H3, such as H3N2.

15. A pharmaceutical composition according to claim 12 comprising at least one additional binding molecule.

16. A pharmaceutical composition according to claim 15 characterized in that the additional binding molecule is capable of neutralizing influenza virus comprising HA of the H1 and H5 subtype, such as H1N1 and H5N1, or a functional variant thereof.

17. A nucleic acid molecule encoding a binding molecule according to any one of the claims 1-10.

18. A vector comprising at least one nucleic acid molecule according to claim 17.

19. A host comprising at least one vector according to claim 18.

20. A host according to claim 19, wherein the host is a human cell.

21. A method of producing a binding molecule according to any one of claims 1-10, wherein the method comprises the steps of:
culturing a host according to claim 19 or 20 under conditions conducive to the expression of the binding molecule or functional variant, and optionally,
recovering the expressed binding molecule or functional variant.