CLAIMS:

1. A haemagglutinin protein of influenza virus subtype 5 (H5 protein) comprising an amino acid sequence of SEQ ID NO: 1, wherein the amino acid sequence of SEQ ID NO: 1 is modified in the H5 protein to include an ~~has the~~ amino acid 223N and ~~the~~ a modification 328K+, wherein the modification 328K+ means that at amino acid position 328 of H5 protein a second Lysine (K+) is inserted.

~~2. The H5 protein according to claim 1, wherein such H5 protein has the amino acid 94N.~~

~~3.~~2. The H5 protein according to claim 1 ~~or 2~~, wherein the modified SEQ ID NO: 1 ~~such H5~~ has the amino acid 120N.

~~4.~~3. The H5 protein according to ~~any one of~~ claims 1 ~~to 3~~or 2, wherein the modified SEQ ID NO: 1 ~~such H5 protein~~ has the amino acid 155N.

~~5.~~4. The H5 protein according to any one of claims 1 to ~~3~~4, wherein such H5 protein has one or more of the following amino acid clusters selected from the group consisting of:

a. aa 93 - 95: GNF
b. aa 123 – 125: SDH
c. aa 128 – 130: SSG
d. aa 138 - 140: GSS
e. aa 226 - 228: MDF
f. aa 270 – 272: EVE
g. aa 309 – 311: NKL.

~~6.~~5. The H5 protein according to any one of claims 1 to ~~5~~4, wherein such H5 protein comprises a peptide that comprises:

i. the amino acid sequences of SEQ ID NO:4; SEQ ID NO:5 or SEQ ID NO:6; or

ii. any peptide that has at least 85% sequence homology to the polypeptide of i) and that comprises hemagglutinin inhibition in a standard hemagglutinin inhibition assay; or

iii. any part of the polypeptides of i) or ii) comprising at least 8 contiguous amino acids of any of such peptides of i) or ii) and wherein any of such peptide comprises hemagglutinin inhibition in a standard hemagglutinin inhibition assay; or

iv. any peptide of i), ii) or iii) having one of the amino acids 36T, 36K, 83A, 83T, 83D, 86A, 86V, 120S, 155S, 156A, 156T, 189R, 189K, 212K, 212R, 212E, 263A or 263T; or

v. any peptide of i), ii), iii) or iv) having one or more of the following amino acid clusters selected from the group consisting of:

a. aa 93 - 95: GNF
b. aa 123 – 125: SDH
c. aa 128 – 130: SSG
d. aa 138 - 140: GSS
e. aa 226 - 228: MDF
f. aa 270 – 272: EVE
g. aa 309 – 311: NKL.

~~7.~~6. The H5 protein according to any one of claims 1 to ~~6~~5, wherein such H5 protein is originated from an avian influenza virus.

~~8.~~7. The H5 protein according to anyone of claims 1 to ~~7~~6, wherein such H5 protein comprises the amino acid sequence of SEQ ID NO:4.

~~9.~~8. An nucleic acid molecule, coding for the H5 protein according to any one of claims 1 to ~~8~~7.

~~10.~~9. An vector comprising the nucleic acid molecule according to claim ~~9~~8.

~~11.~~10. A method for producing the H5 protein of anyone of claims 1 to ~~8~~7, wherein said method comprises the steps:

a. isolating or amplifying the nucleic acid that codes for such H5 protein;

b. cloning the H5 encoding nucleic acid in an expression vector;

c. expressing the H5 protein

~~12.~~11. The method according to claim ~~11~~10, wherein the expression vector is a recombinant baculovirus.

~~13.~~12. The method according to claim ~~11~~10 or ~~12~~11, wherein the H5 protein is expressed in insect cells.

~~14.~~13. The H5 protein according to any one of claims 1 to ~~8~~7 for use as a medicine.

~~15.~~14. The nucleic acid molecule according to claim ~~9~~8 for use as a medicine.

~~16.~~15. The vector according to claim ~~10~~9 for use as a medicine.

~~17.~~16. The use of the H5 protein according to any one of claims 1 to ~~8~~7 for the preparation of a pharmaceutical composition for the prophylaxis or treatment of infections caused by viral influenza.

~~18.~~17. The use of the nucleic acid molecule according to claim ~~9~~8 for the preparation of a pharmaceutical composition for the prophylaxis or treatment of infections caused by viral influenza.

~~19.~~18. The use of the vector according to claim ~~10~~9 for the preparation of a pharmaceutical composition for the prophylaxis or treatment of infections caused by viral influenza.

~~20.~~19. The use according to any one of claims ~~17~~16 to ~~19~~18, wherein the viral influenza infection is caused by avian, swine or human influenza virus or any combination or hybrid thereof.

~~21.~~20. A kit of parts, comprising:

a. the H5 protein according to any one of claims 1 to ~~8~~7, the nucleic acid molecule according to claim ~~9~~8, or the vector according to claim ~~10~~9; and

b. a package leaflet indicating the use of such H5 protein, nucleic acid molecule, or vector of a) for the treatment or prophylaxis of infections caused by influenza virus.

~~22.~~21. The kit according to claim~~s~~ ~~21~~20, wherein such kit comprises at least one further antigen of poultry or mammalian pathogen.