

Claims

1. A nano propolis composite adjuvant for poultry, characterized in that the nano propolis composite adjuvant for poultry is composed of the following volume percentages of components: 10% -30% propolis ethanol extract, 30% -45% immune enhancer, and 30%
5 -50% surfactant; the dry matter content of propolis in the ethanol extract of propolis is 50mg/mL~70mg/mL.
2. The nano propolis composite adjuvant for poultry according to claim 1, characterized in that the immune enhancer is composed of a mixture of immune enhancer A and immune
10 enhancer B; the mixed volume ratio of immune enhancer A and immune enhancer B is 5-8:1; the immune enhancer A is white oil or vitamin D, and the immune enhancer B is a mixture of grass mycobacterial extract and dimethyl bis octadecylammonium bromide; or the immune enhancer B is a saponin.
- 15 3. The nano propolis composite adjuvant for poultry according to claim 2, characterized in that the volume ratio of the mixture of the grass mycobacterial extract and dimethyl bis octadecylammonium bromide is 100:1~30.
4. The nano propolis composite adjuvant for poultry according to claim 1, characterized in
20 that the grass mycobacteria extract is obtained by lysing inactivated grass mycobacteria cells under 800-1000 bar conditions and centrifuging at 11000rpm~13000rpm for 25min~35min; the saponin is soapberry saponin A or soapberry saponin QS-21.
5. The nano propolis composite adjuvant for poultry according to claim 1, characterized in
25 that the surfactant is polyglycerol fatty acid ester, Span-80, and polyoxyethylene hydrogenated castor oil.
6. The nano propolis composite adjuvant for poultry according to claim 5, characterized in
30 that the volume ratio of polyglycerol fatty acid ester, Span-80, and polyoxyethylene hydrogenated castor oil is 7~9:3~5:2.
7. A nano propolis composite adjuvant for poultry and its application as claimed in claim 1
in the preparation of inactivated poultry vaccines, subunit vaccines, or live vaccine
dilutions.
- 35 8. The nano propolis composite adjuvant for poultry, characterized in that the vaccine comprises the The nano propolis composite adjuvant for poultry as claimed in claim 1 and an inactivated antigen or subunit antigen of pathogenic microorganisms infecting

poultry.

9. The vaccine according to claim 8, characterized in that the antigen is Newcastle disease virus, avian influenza virus, or *Haemophilus parahaemolyticus*.

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10. The vaccine according to claim 9, characterized in that the mixing volume ratio of the antigen to the avian nano propolis composite adjuvant is 2-4:1.