

## Investigation of the immune response in chickens after immunization with recombinant Newcastle disease vector viruses against highly pathogenic avian influenza

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Highly pathogenic avian influenza virus (HPAIV) of the subtype H5N1 belongs to the family Orthomyxoviridae and causes the highly pathogenic avian influenza (HPAI), a systemic and highly lethal disease in poultry.

It is known that recombinant Newcastle disease vector viruses (NDV) expressing the hemagglutinin (HA) of the subtype H5N1 are able to induce high antibody titers against H5 in chickens conveying protection against a lethal infection with HPAIV H5N1.

Mostly, humoral response is studied after immunization by measuring the induction of antibodies. However, the T-cell mediated immune response, a very important process in order to eliminate e.g. a viral pathogen has also to be considered and was investigated here, tracking the development and alteration of antigen-specific immune cell population and production of cytokines after immunization of commercial chickens. Since commercial chicken carry maternally derived antibodies (MDA) against Newcastle disease (ND) due to comprehensive vaccination, this study was carried out with a recombinant H5-expressing chimeric NDV (chNDVFHNPMV8H5), which is characterized by substitution of the NDV surface proteins F and HN by those of the avian paramyxovirus serotype 8 and known to overcome the blockade of MDA resulting in a good replication.

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