PalStudent Journal
A Palestinian Scientific Journal for the Youth

**ABSTRACTS: VOLUME 2, SPECIAL ISSUE**

## ABSTRACT

# *Development of an In-House Indirect ELISA Kit for Detection and Identification of Infectious Bronchitis Virus (IBV) Antibodies.*

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**Published inDecember 2020**

Infectious bronchitis virus is fatal and highly contagious. Despite the vaccination of industrialized poultry, it causes serious losses in commercial poultry worldwide. Several studies proved that ELISA is more accurate, sensitive, rapid and less technically demanding than Haemagglutination inhibition (HI) test when used to detect antibody titers against IBV. However, commercial ELISA kits against IBV are very expensive. The development of an in-house indirect ELISA kit will be challenging to standardized but offer the potential of providing a cost-effective tool for local vaccine efficacy testing that will be easier to use than HI testing.

The setup of an in-house indirect ELISA will go through several main stages. Firstly, antigen production will rely upon obtaining the virus from a live vaccine, which will then be inoculated in eggs allantoic fluid in order to get a large amount of NDV. Secondly, purification and quantification steps will be done and verified by Haemagglutination test, spectrophotometry and SDS-PAGE. After validation of antigen preparation, ELISA plates will be coated with antigens and tested using serial diluted serum samples. In sucrose gradient purification, purified virus band is expected to form between 40%-50% sucrose gradient. According to literatures, we expect to have roughly 6 polypeptides with molecular weight ranged from 12 KDa to 160 KDaas


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a result of SDS-PAGE. Moreover, we predict to have a highly sensitive and specific indirect ELISA kit for the detection of IBV infection.


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