PREDICTION OF B-CELL EPITOPE ON FRAGMENTED GENE ENCODING FUSION PROTEIN OF *NEWCASTLE DISEASE* VIRUS FROM NON-VACCINATED NATIVE CHICKEN (*Gallus gallus domesticus*) IN SURABAYA

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ABSTRACT

The aim of this research was to analyze prediction of B-cell epitopes from fragmented gene encoding Fusion (F) protein of *Newcastle Disease* virus in non-vaccinated native chicken (*Gallus gallus domesticus*) in Surabaya. A non-vaccinated native chicken that suspected of being infected with ND virus was collected from Wonokromo poultry market in Surabaya, Indonesia. The organ sample was collected from brain, intestine, proventriculus, lung, pharynx, and hepar and named by "F1-D1/IND/2017" for the sample. Organ sample was shattered and centrifuged to collect the supernatant and continued with RNA extraction. DNA amplification with two-step of RT-PCR was using Thermoscript ™ kit. During the PCR process, electrophoresis gel was prepared using Agarose-LE with 1% gel. The results of PCR on DNA bands was 976 bp long, similar with expected viewed, then purified for sequencing materials preparation. The sequencing of PCR products (cDNA) aims to confirm the primary used of Fusion protein. The obtained nucleotides result from sequence were aligned using the existing Clustal W in BioEdit ver. 8.0 software, then to be translated into amino acid from 976 nucleotides to be 325 amino acids also with BioEdit ver. 8.0 software. B-cell epitope prediction on *Newcastle Disease* virus was analyzed using Epitope Prediction Tools/IEDB online software with *Bepipred Linear Epitope Prediction* method. The result showed that F1-D1/IND/2017 sample has 20 epitopes based on epitope affinity of cell B on Fusion protein, more than the epitope that possessed by data from *GenBank* which only have 15-17 epitopes.

Keywords : B cell, epitopes, Fusion protein, *Newcastle Disease*, native chicken