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INSILICO PREDICTION OF PEPTIDE BASED VACCINE AGAINST FOWLPOX VIRUS (FPV)

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Fowlpox virus (FPV) is double stranded DNA virus and a member of Poxviridae family which transmitted via aerosols and insect bite and causes cutaneous and diphtheritic infection in poultry population. This study aimed to design peptide vaccine by selecting all possible epitopes after analyzing of all FPV140 protein sequence reported in NCBI database using insilico approaches. After alignment of retrieved sequence the conserved region applied into IEDB analysis tool to predict B and T cell epitopes, then testing the affinity of predicted epitopes to bind to (BF2*2101) (BF2*0401) chicken receptor for MHC1 molecule, peptides with low energy when docked against receptor were suggested as epitopes based vaccine. Peptides (50 PPSPKP 55, 51 PSPKPL 56, 52 SPKPLP 57, 53 PKPLPK 58, 54 KPLPKS 59, 55 PLPKSK 60, 56 LPKSKQ 61 and 18 RPSSTV 23) were most potential B cell epitopes while (110 YIMDNAEKL 118, 274 FYHRMYYP 282, 278 MYYPLFSVF 286 231 YVVDNDRYV 239 and 317 LLSGVFLAY 325) docked epitopes suggested to be T cell epitopes because of their good binding affinity especially this overlapped one 110 YIMDNAEKL 118. This study concluded that those predicted epitopes might use to produce good vaccine against FPV after invitro and invivo studies to evaluate its efficiency.

BIOGRAPHY

Sarah T Idris has completed her master degree from Sudan University of Science and Technology, Sudan. She is medical laboratory specialist, with another Master of Bioinformatics under process at University of Bahri, Sudan. Working at National Medicines and Poisons Board, Sudan.

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