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Ming-Shou Hsieh, Jie-Long He, Tzong-Yuan Wu, Rong-Huay Juang

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Ming-Shou Hsieh [a], Jie-Long He [b], Tzong-Yuan Wu [c], and Rong-Huay Juang[a,d,*]
juang@ntu.edu.tw

[a]Institute of Biotechnology, National Taiwan University, Taipei, Taiwan 106

[b]Department of Post-Baccalaureate Veterinary Medicine, Asia University, Taichung, Taiwan 413

[c]Department of Bioscience Technology, Chung Yuan Christian University, Chungli, Taiwan 320

[d]Department of Biochemical Science and Technology, National Taiwan University, Taipei, Taiwan 106

[*]Corresponding author.

ABSTRACT

A bi-cistronic baculovirus expression vector was constructed to facilitate the expression, detection, and isolation of the hemagglutinin (HA) fragment HA1 of H6N1 avian influenza virus (AIV) in an insect and a culture of its cells. In this construct, the GP67sp signal peptide promoted the secretion of the recombinant protein into the culture medium, and improved protein expression and purification. Enhanced green fluorescent protein, co-expressed through an internal ribosome entry site, served as a visible reporter for protein expression detection. The hemolymph of *Spodoptera litura* larvae infected with the bi-cistronic baculovirus was collected for the purification of the recombinant HA1, which was found to be glycosylated, and monomeric and trimeric forms of the recombinant HA1 were identified. Proteins expressed in both the cell culture and larvae served as effective subunit vaccines for the production of antiserum against HA. The antiserum recognized the H6 subtype of AIV but not the H5 subtype.

Keywords:

Avian influenza virus; Bi-cistronic baculovirus expression system; Hemagglutinin; *Spodoptera litura* larvae

Abbreviations: