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## Vero cell lines expressing nuclear location signals of *Penaeus merguiensis* hepandensovirus: An early study

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**Statement of the Problem:** Parvoviral diseases are emerging as a constant threat to penaeid culture due to their ability to cause slow growth and mass mortality of infected prawns. *Penaeus merguiensis hepandensovirus* (PmeHDV) (GenBank Accession No. DQ458781) is a shrimp hepatopancreatic parvovirus (HPV), an Australian strain of the species *Decapod* hepandensovirus *1*, in the genus *Hepandensovirus*, subfamily *Densovirinae*. *Densovirinae* are intranuclear and require S-cells in their S-phase for all or most of all their replication and assembly. Transportation into and out from nucleus is allowed by the binding of nuclear location signals (NLSs) to Importins (Imp). A bioinformatical study on PmeHDV supported that the virus has putative NLSs that need to be tested. The present study aims to determine if of the three putative NLSs of PmeHDV are functioning by transfecting NLS-inserted-plasmid DNAs into mammalian cell culture (Vero) using a transfection reagent.

**Methodology & Theoretical Orientations:** Each plasmid has been synthetically constructed and inserted with each sequence of the putative NLSs and a fluorescent protein. The presence of the NLS in the cell nucleus and cytoplasm was screened under a fluorescent microscope.

**Findings:** All transfected cells in our study demonstrate no noticeable differences within transfected-Vero cell cultures with desired NLSs genes. The overlay of visualization of transfected plasmids with sequential fluorochrome sets is presented in Figure 1. It appears that NLSs are not functioning well as that the proteins are blocked at the nuclear membrane and not going across.

**Conclusion & Significance:** Our fluorescent study was not sensitive enough to detect differences in NLS-transfected-cells under different filters. The method used was ineffective in identifying the location of NLSs. In the future, the study of virus-host interaction using cell cultures as models remains a major challenge.

### Biography

D Syahidah is a PhD student at JCU Australia (2013-2017). She completed her BSc in Fisheries Science from Brawijaya University in 1997 and MAppSc from JCU Australia in 2010. Her current research focuses on investigating nuclear location signals (NLSs) of *Penaeus merguiensis* hepandensovirus. During her PhD study, she has received JCU Student Sustainability award in 2014, completed 3 modules of JCU professional (2013-2014), participated in the On-awards Enrichment program in 2015, and received the Hadi Soesastro Prize in 2016.

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