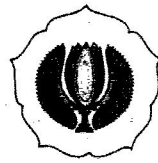


ISTNR 2015



INTERNATIONAL SEMINAR ON THE TROPICAL NATURAL RESOURCES 2015

UNIVERSITY OF MATARAM, 10-13 JUNE 2015



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Characterization of VP28 and VP19-encoding Genes and Proteins Sequence of White Spot Syndrome Virus (WSSV) Isolated from Indonesia

Muhamad Ali^{a*}, Sulaiman N. Depamede^a, Bagus DH Septiono^b, Alis Mukhlis^b, Sahrul Alim^b, Muhamad Amin^c, and Mohammad Ashari^a

^aFaculty of Animal Sciences, ^bFisheries Study Program, Mataram University, Jl. Majapahit No. 62 Mataram, ^cFaculty of Fisheries Mataram 45 University, Mataram, Indonesia 83125

*Corresponding author: ali.molbiotech@gmail.com

Abstract

White Spot Syndrome (WSS) is considered to be the most virulent disease infected penaeid shrimp farming industries. Since firstly detected in Taiwan, this disease has spread very quickly worldwide including Indonesia. This study was mainly aimed to isolate WSSV from Indonesian shrimp farm and compare DNA sequence of two major envelope proteins (VP28 and VP19)-encoding genes with strains isolated from other countries. The result indicated that band sizes were about 540 bp and 384 bp for VP28 and VP19 respectively. Based on DNA sequences both VP28 and VP19, Indonesian strain seemed to be very close to a strain from South Carolina (USA) compared to other countries. In terms of proteins sequence, VP28 from Indonesia also showed high similarity to USA and Brazil. However, based on VP19 proteins, the Indonesian strain isolated in this study seemed to be quite different, showed 95.1% homology with strains from other countries. This result may suggest that White Spot Syndrome Virus spreading in Indonesia came from USA and Brazil. However, further analyses need to be done to confirm this result.

Keywords: White Spot Syndrome Virus (WSSV), VP28, VP19

N-terminal Fusion of White Spot Syndrome Virus (WSSV) with Glutathione-S-Transferase-T to Enhance Protein Production in *Escherichia coli*

Muhamad Ali^{a*}, Sulaiman N. Depamede^a, Bagus DH Septiono^b, Alis Mukhlis^b, Muhamad Amin^c, and Mohammad Ashari^a

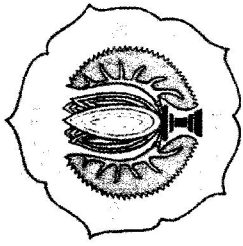
^aFaculty of Animal Sciences, ^bFisheries Study Program, Mataram University, Jl. Majapahit No. 62 Mataram, ^cFaculty of Fisheries Mataram 45 University, Mataram, Indonesia 83125

*Corresponding author: ali.molbiotech@gmail.com

Abstract

The low expression level of a VP28 gene of White Spot Syndrome Virus (WSSV) in prokaryotic cells is considered to be a major obstacle for large scale production of the protein as shrimp farming industry. The omitting of an N-terminal hydrophobic domain of the VP28 protein to improve the gene expression in *E. coli*. However, the incomplete VP28 protein, which may affect the protein stability. This study has tried a protein fusion tag strategy by inserting a hydrophobic domain of a full open reading frame of the VP28 gene fused with a glutathione-S-transferase (GST) gene. The fused gene was subsequently expressed in *E. coli* cells under 0.5 mM IPTG induction. The result indicated that the recombinant protein significantly increase the expression level of the VP28 protein. These results suggested a novel approach to producing entire VP28 protein in *E. coli*.

Keywords: White Spot Syndrome Virus (WSSV), VP28, hydrophobic domain, GST-tag



Certificate of Participation

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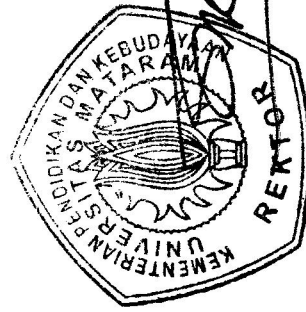
“Toward Sustainable Utilization of the Tropical Natural Resources for Better Human Prosperity”

This certificate is awarded to:

Muhamad Ali

for the successful contribution as

ORAL PRESENTER



Prof. Ir. Sunarpi, Ph.D

Rector of University of Mataram

Mataram, 12 June 2015

Dr. Islamul Hadi

Chief of Organizing Committee