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### **Future prospect of mosquito salivary components as novel target for vector based vaccine against Dengue: Molecular characterization of immunomodulatory protein from salivary glands of *Aedes aegypti***

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Dengue Fever (DF) Virus-based Vaccine development showed a relatively slow progress because it should induce protection against the 4 serotypes of Dengue Viruses and there is a very limited adequate animal model for dengue virus infection. In the last decade, new approach in vaccine development for arthropode-borne diseases is using salivary vector components. This approach based on hypothesis that arthropode vectors saliva contains vasomodulator and immunomodulator proteins that could enhance pathogen infection. Therefore, it should be possible to control pathogen transmission by vaccinating the host against the molecule(s) in saliva that potentiate the infection, thereby blocking the enhancing effects of saliva and thus preventing the pathogen from establishing infection in the host (Transmission Blocking Vaccine, TBV). However, specific component as a potential target for TBV in *Aedes aegypti*, as major vector for DF has not yet been identified so far. This paper wanted to elaborate the immunogenic components from Salivary Gland (SG) of *Aedes aegypti* as potential immunomodulatory protein. We have characterized 2 immunogenic proteins that are only recognized by healthy people living in endemic area and not by people from non-endemic area. They have molecular weight of 31 & 56 kD. Further molecular characterization by Mass-Spectrophotometry of those proteins showed that 31 kDa and dan 56 kDa have high similarity with D7-Protein Family (Odorant Binding Protein) & Apyrase, respectively. These proteins have very important role in vector blood feeding process. This also supported by the strong immunogenicity of 31 kDa against human sera in healthy people as well as Dengue patients. The apyrase activity of 56 kD protein has also been proven in this research.

#### **Biography**

Kartika Senjarini has completed his PhD (Dr. rer. nat) at the age of 32 years from The University of Rostock – Germany. She had the opportunity to do postdoctoral studies at The University of Kassel, Germany as well as at International Vaccine Institute, South Korea. Apart from her responsibility as principle investigator in the Transmission Blocking Vaccine's Research Group at her Department, she is currently also appointed as Head of Biology Department, Faculty of Mathematic & Natural Sciences, The University of Jember Indonesia.

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