

## **Production of long helical capsid of Nipah virus by *Pichia pastoris*.**

### **ABSTRACT**

The nucleocapsid (N) protein of Nipah virus (NiV) produced in a recombinant host can replace the use of inactivated virus as a diagnostic reagent because it is safer and affordable. The aim of this study was to express the N protein in *Pichia pastoris*. The N gene of NiV was cloned into the yeast expression vector, pPICZ B and expressed in *P. pastoris*. The recombinant N protein of NiV was purified using sucrose density gradient ultracentrifugation and was confirmed with Western blotting using rabbit anti-N antibody. The *P. pastoris* expressed N protein self-assembled into helical structures as large as 1.5  $\mu\text{m}$  as shown in an electron micrograph. ELISA analysis performed with the swine sera obtained during the viral outbreak proved that the recombinant N protein to be highly antigenic. The NiV N protein produced in *P. pastoris* serves as an alternative to the recombinant N protein produced in *Escherichia coli*.

**Keyword:** Paramyxovirus; Nipah virus; Nucleocapsid protein; Helical structure; *Pichia pastoris*.