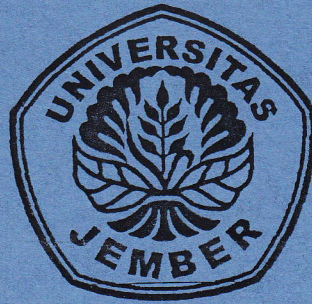


302

## LAPORAN PENELITIAN DIPA



Perbedaan toksisitas supernatan dengan toksisitas protein toksin bakteri *Photorhabdus* isolat Indonesia terhadap larva nyamuk *Aedes aegypti*.

Oleh

Irma Prasetyowati, SKM.

Drg. Rudy Joelianto, M. Biomed

*Dilaksanakan berdasarkan surat keputusan rektor Universitas Jember  
Nomor : 3277/125/PP.9/2006 tertanggal 22 Mei 2006 dengan sumber dana  
DIPA Universitas Jember*

PUSAT PENELITIAN KESEHATAN  
LEMBAGA PENELITIAN UNIVERSITAS JEMBER  
NOVEMBER 2006

ok 2007  
LP. 2006  
DIPA  
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NOVEMBER 2006**


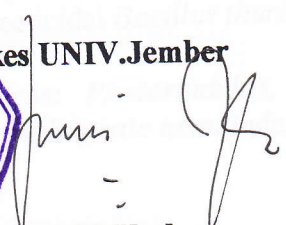
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HALAMAN PENGESAHAN  
USUL PENELITIAN DIPA/ Eks RUTIN

1. a. Judul Penelitian : Perbedaan toksisitas supernatan dengan toksisitas protein toksin bakteri *Photobacterium* isolat Indonesia terhadap larva nyamuk *Aedes aegypti*.  
b. Bidang Ilmu : Kesehatan  
c. Kategori Penelitian : I
2. Ketua Peneliti  
a. Nama Lengkap : Irma Prasetyowati, SKM  
b. Jenis Kelamin : Perempuan  
d. NIP : 132 447 931  
e. Jabatan Sekarang : Dosen  
f. Jurusan/Fakultas/Pusat Penelitian : PUSLITKES  
g. Pusat Penelitian : Universitas Jember
3. Jumlah Anggota Peneliti : 1 orang Dosen  
Nama : drg. Rudy Joelianto, M. Biomed
4. Lokasi Penelitian : Lab. Biologi UNEJ
5. Lama Penelitian : 9 bulan
6. Biaya yang Diperlukan : Rp.5.000.000,-  
b. Sumber Lain : -  
Jumlah : Rp. 5.000.000,- [ lima juta rupiah]

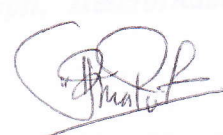
Mengetahui  
Kepala Puslitkes UNIV. Jember



[Dr. Dwi Wahyuni, M.Kes]

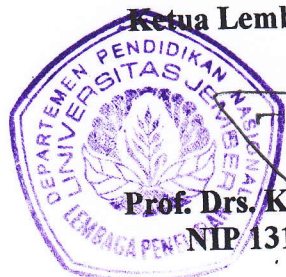
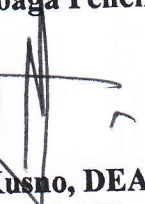
NIP. 131 660 781

Jember, November 2006  
Ketua Peneliti



(Irma Prasetyowati, SKM  
NIP. 132. 447 931

Menyetujui  
Ketua Lembaga Penelitian



Prof. Drs. Kusno, DEA. Ph.D  
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### ABSTRACT

*Photorhabdus luminescens* strains isolated from Indonesia is enteric bacterium that is found in association with entomopathogenic nematodes *Heterorhabditis indicus* isolated in the Ngadas- Jawa Timur, Indonesia . When grown in peptone broth, in the absence of the nematodes, the bacteria produce a protein toxin complex that is lethal when given orally into the hemolymph of *Aedes aegypti* larvae. This research entitled purification and characterization of toxin protein of *Photorhabdus luminescens* strain isolated Indonesia as entomopathogenic of *Aedes aegypti* ( The alternative of new Bioinsecticide).

The supernatant character of *Photorhabdus luminescens* strains isolated from Indonesia as a protein complex and contains protease activity, sensitive to heat, protein concentration is 0,155  $\mu\text{g} / \text{ml}$ .

The toxin purified by analyses of the protein by sodium dodecyl sulfate – polyacrylamide gel electrophoreses (SDS – PAGE) showed to the three components is protein sub unit 29 kDa, 67 kDa and 97 kDa, as a pure protein which has an estimated molecular weight of 67 kDa, The protein concentration is 0,615  $\mu\text{g} / \text{ml}$ . The purified toxin processes as entomopathogenic when given orally into *Aedes aegypti* larvae.

The toxic protein purification the lethal into *Aedes aegypti* larvae. With the 24hour exposed,  $LC_{50} = 0,00112$  . For the 48 hour exposed,  $LC_{50} = 0,00131$  deffers with supernatan that is lethal into *Aedes aegypti* larvae . With the 24hour exposed,  $LC_{50} = 0,0129$  . For the 48 hour exposed,  $LC_{50} = 0,0119$ .

The toxin produced by the bacterium *Photorhabdus luminescens* strains isolated from Indonesia present potential alternatives of new bioinsecticide replacing for insect resistance to insecticidal *Bacillus thuringiensis* toxins expressed in transgenic plant.

**Key words:** *Photorhabdus*, *Thuringiensis*, *Aedes aegypti*, *Heterorhabditis indicus* Entomopathogenic nematode.

