# LAPORAN PENELITIAN DIPA

**Perbedaan toksisitas supernatan dengan toksisitas protein toksin bakteri *Photorhabdus i*solat 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*



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**LEMBAGA PENELITIAN UNIVERSITAS JEMBER**

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# HALAMAN PENGESAHAN
# USUL PENELITIAN DIPA/ Eks RUTIN

| | |
|---|---|
| 1. a. Judul Penelitian | : Perbedaan toksisitas supernatan dengan toksisitas protein toksin bakteri *Photorhabdus isolat* Indonesia terhadap larva nyamuk *Aedes aegypti.* |
| b. Bidang Ilmu | : Kesehatan |
| c. Katagori Penelitian | : I |
| 2. Ketua Peneliti | |
| a. Nama Lengkap | : Irma Prasetyowati, SKM |
| b. Jenis Kelamin | : Perempuan |
| d. N I P | : 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
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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 produc 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 anew 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 µg / 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 µg / ml. The purified toxin prosesses as entomophatogenik when given orally into *Aedes aegypti* larvae.

The toxic protein purification the lethal into A*edes aegypty* 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.***