

**ABSTRACT**  
**IDENTIFICATION OF A NOVEL ENTOMOPATHOGENIC NEMATODE**  
**STRAIN AND ITS MUTUALISTIC BACTERIA ISOLATED FROM**  
**TURKEY**

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This study has been conducted to identify a novel entomopathogenic nematode isolate (isolate no. 48-02) and its mutualistic bacteria isolated from Turkey. Entomopathogenic nematode was identified with molecular analyses and morphometric measurements. Mutualistic bacteria of novel EPN strain was identified with molecular and biochemical analyses.

According to molecular and morphometric data, new nematode isolate (48-02) was identified as *Heterorhabditis bacteriophora*.

In the second part of the study, according to molecular and biochemical analyses, isolated bacteria from novel EPN strain was identified as *Photorhabdus luminescens* subsp. *laumondii*. The symbiotic bacteria of new *H. bacteriophora* isolate do not produce red pigment and host tissue not become gumminess. *P. luminescens laumondii* strain 48-02 was more virulent and killing its host faster than molecularly similar *P. luminescens laumondii* TT01 strain. On the other hand, cross breeding tests showed that *P. luminescens laumondii* strain 48-02 colonized in *H. bacteriophora* TT01 infective juveniles nematodes but the bacterial symbiont of TT01 did not colonized in *H. bacteriophora* 48-02 infective juveniles.

**Key words:** Entomopathogenic nematodes, *Heterorhabditis*, *Photorhabdus*.