

A New Symbiotic Bacterium Isolated from Entomopathogenic Nematode, *Heterorhabditis* sp. Collected in Korea

Kang, Sangjin, Youngjin Park, Yonggyun Kim and Sangchan Han

School of Bioresource Sciences, Andong National University

Entomopathogenic nematodes of the genera *Steinernema* and *Heterorhabditis* are used successfully for the biocontrol of numerous insect pests. These two genera are mutualistically associated with symbiotic bacteria. Even though the hermaphrodite nature, *Heterorhabditis* consisting of 9 species has been known by its high genetic variability based on the previous analyses using isozymes and DNA markers. This study reports a new isolate of *Heterorhabditis* sp. collected in Hwasung, Gyungki Do, Korea. We also could isolate a symbiotic bacterium from the infected larval hemolymph. The isolated bacterium emitted fluorescence under UV light and showed red color on NBTA medium. To identify the bacterium, we assessed the characteristics described in Bergeys manual about the symbiotic bacteria of the entomopathogenic nematode. Fatty acid composition and carbon utility were analyzed in the bacterium by Sherlock and Biolog identification systems, respectively. These results indicate that the bacterial isolate is *Photorhabdus luminescens*. We also found the potent pathogenicity of the bacterium against the fifth instar larvae of *Spodoptera exigua*.