

***Nosema* sp. Isolated from Cabbage White Butterfly  
(*Pieris rapae*) Collected in Korea**

**Ji Young Choi<sup>1</sup>, Jong Gill Kim<sup>1</sup>, Young Cheol Choi<sup>1</sup>, Tae Won Goo<sup>1</sup>,  
Jin Hee Chang<sup>2</sup>, Yeon Ho Je<sup>2</sup>, and Keun Young Kim<sup>1</sup>**

*<sup>1</sup>Department of Sericulture and Entomology, National Institute of Agricultural  
Science and Technology, R.D.A. Suwon 441-100, South Korea and <sup>2</sup>School of  
Agricultural Biotechnology, Seoul National University, Suwon 441-744, South  
Korea*

A microsporidium, from cabbage white butterfly, *Pieris rapae*, collected Korea, was purified and characterized by its gene structure, spore morphology and pathogenicity. From the observation of the isolate by SEM and TEM, endospore, anchoring disc, nuclei, about 12 polar filament coils of the polar tube and posterior vacuole were all identified. Nucleotide sequence was determined for a portion of genomic DNA which spans the V4 variable region of the small subunit rRNA gene. Comparison with GenBank database for 11 other microsporidia species suggests that this isolate was most closely related to some *Nosema* species. The pathogenicity against cabbage white butterfly was quantified by inoculating the second instar larvae. Peroral inoculation at dosage of 10<sup>8</sup> spores/ml resulted in the death of all larvae prior to adult eclosion but at lower spore dosages of 10<sup>4</sup>–10<sup>5</sup> spores/ml, many adults successfully emerged. The median lethal dose (LD<sub>50</sub>) was determined as 4.6 × 10<sup>6</sup> spores/ml and the isolate also transmitted transovarially to the progeny eggs at a frequency of 92%.