

JOINT EVENT

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### Characterization of a granulovirus from the fall webworm, *Hyphantria cunea* (Drury) (Lepidoptera: Arctiidae)

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A broad survey of the fall webworm, *Hyphantria cunea* (Lepidoptera: Arctiidae) populations in agricultural and forested areas in the central black sea region of Turkey led to the detection of granuloviruses (GVs). Thirty insect cadavers were collected from different locations, 8 of which contained GV. All of them were determined to be *Hyphantria cunea* granulovirus (HycuGV) by tissue PCR and sequence analysis. A selected isolate (Hc1) was characterized and tested against third instar larvae of *H. cunea*. Electron microscopy confirmed typical GV morphology with ovoid granules of approximately 318-546 nm × 174-240 nm. Each granule contained a single rod-shaped virion with a mean size of 35-51 nm × 202-341 nm. The genome was estimated to be 123 kb by restriction endonuclease analysis. Partial sequencing of the granulin, late expression factor-8 (lef-8) and late expression factor-9 (lef-9) genes also confirmed the identity of the virus as HycuGV. A phylogenetic analysis based on these conserved genes, HycuGV-Hc1 grouped together with the previous HycuGV isolate (A5-1) and *Estigmene acrea* granulovirus (EsacGV) isolate from the same family. The LC<sub>50</sub> of Hc1 isolate was 2.6×10<sup>4</sup> occlusion bodies (OBs/ml) against third instar *H. cunea* larvae. HycuGV-Hc1 caused 80.17% mortality with 109 OBs/ml in pot experiments performed in a greenhouse. This is the first study to describe a novel Turkish HycuGV-Hc1 isolate and preliminary data suggest the virus have a significant potential as an effective biopesticide for *H. cunea* control.

#### Biography

Remziye Nalcacioglu has completed her PhD in 2003 from Karadeniz Technical University, in Turkey. She has been working in the same university as an academician. She is working on insect viruses including baculoviruses, iridoviruses.

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