Morphological and Physiological Characteristics of *Cotesia plutellae* Teratocytes Cultured *In vitro*

Neil Andrew M. Basio and Yonggyun Kim

Department of Agricultural Biology, College of Natural Sciences, Andong National University, Andong, Korea

Teratocytes were found in the parasitoid *Cotesia plutellae* (Hymenoptera: Braconidae). The cells originate from the embryonic envelope. In vitro, they grew in size from 15.5 ± 0.6 μm during hatching (D0) to 37.2 ± 9.6 μm at D7 in Ex-cell 400 medium with added Ampicillin and Kanamycin. Extended culture yielded the biggest observed teratocyte diameter of 69μm at D22. One function of these cells is believed to be the alteration of host physiology to favor development of the parasitoid. Indeed, theseparticular teratocytes were observed to inhibit development of the host and also suppress immune response. The immune suppression was not rescued by arachidonic acid, suggesting that eicosanoid pathway is not affected. When injected, 50 teratocytes were enough to inhibit pupation and 100 were enough to suppress nodulation capacity. Its secretions in the media, in which several proteins were detected by silver stain, were also similarly active. It is expected that some of these proteins are responsible for the alteration of host physiology and thus have the potential for application in insect control.

Key words: *Cotesia plutellae*, teratocyte, in vitro culture, immune, development