Genetic Differentiation of *Bombus ignitus* Smith (Hymenoptera; Apidae)

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Bumblebees are important pollinators of greenhouse vegetables such as tomatoes. A commercial bumblebee species, *Bombus terrestris*, have been imported into Korea from Europe since 1993 as crop pollinators. Also a indigenous bumblebee species, *Bombus ignitus* Smith, in Korea have been evaluated for pollinators and studied for artificial mass rearing as commercial pollinators.

We compared the size of queens, characteristics of colony development, and nucleotide sequence of mitochondrial cytochrome oxidase I (COI) gene of *B. ignitus* from five regions of Korea and one from Japan to find out any genetic diversities in this species.

There were no significant differences of the sizes of wing, head, and tongue among bumblebee queens from five regions in Korea. However, the ecological measurements on the fecundity of queen, colony development showed certain variabilities among populations in Korea and also in Japan. Based on the 423bp sequences of COI, four haplotypes (BI1 to BI4) of COI could be determined. The common type, BI1, dominated in all five regions of Korea. BI2 and BI3 distributed in two regions, Jeongseon and Muju, with 12.5% of frequency. Three worker bees of *B. ignitus* collected from Nagano, Japan retained all the BI4 halotypes.