

# Change of Ferritin of Wax Moth, *Galleria mellonella* on Dietary Heavy Metal Ions

**Chi-Won Choi, Dong Hwan Seo, Sook Jae Seo<sup>1</sup> and  
Chi Young Yun**

Dept. of Biology, Daejeon University,

<sup>1</sup>Dept. of Biology, Gyeongsang National University

A new tissue ferritin from *Galleria mellonella*, which was different from that of haemolymph, was purified and characterized by Western blots against anti-haemolymph ferritin. The tissue ferritin was M.W of 670 kDa and pI value of 7.0, and showed a cross-reactivity against anti-haemolymph ferritin. The tissue ferritin was composed of four subunits, 26, 30, 32 and 34 kDa. The 34 kDa subunit is specific for tissue ferritin, but other subunits are identical to those of haemolymph ferritin by 12.5% SDS-PAGE. The first eight of ten N-terminal amino acid sequences of 34 kDa subunit were the same to that of 32 kDa of haemolymph ferritin.

In Hg-fed larva by adding HgCl<sub>2</sub> directly to the diet, ferritin level in haemolymph decreased at 8 hr-period but gradually increased at 16~48 hr-period, but ferritin level in tissue showed increment pattern during all the time 8~48 hr-period. When seven heavy metal ions (Hg, Co, Cd, Cu, Mn, Zn, and Ni) were fed into the groups of larvae, haemolymph ferritin showed remarkable increment pattern for Hg and Cd, whereas tissue ferritin represented strikingly increment pattern for Cd, Cu, Mn, Zn, and Ni. These results suggest that in *G. mellonella* tissue ferritin is different from haemolymph ferritin in ferritin-inducible mechanism on dietary heavy metal ions as well as biochemical properties.