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Molecular Cloning, Expression and Characterization of cDNAs Encoding the Ferritin Subunits from the Mulberry Longicorn Beetle, *Apriona germari*

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Ferritin is an iron storage protein ubiquitously distributed in animals, plants, as well as fungi and bacteria. Insect ferritins have subunits homologous to the heavy and light chains of vertebrate ferritins. We describe here the cloning, expression and characterization of cDNAs encoding the heavy (Fer2) and light (Fer1) chain subunits from *A. germari*. The complete heavy and light chain cDNA sequences of *A. germari* ferritin comprised 672 bp and 636 bp with 224 and 212 amino acid residues, respectively. The deduced protein sequence of the *A. germari* ferritin subunits was aligned to that of known insect ferritins. The phylogenetic analysis confirmed the deduced protein sequences of heavy and light chain subunits of *A. germari* ferritin split into two clades, G type (Fer2) and S type (Fer1). Southern blot analysis suggested possible presence of the *A. germari* ferritin subunit genes as a single copy, respectively, and Northern blot analysis confirmed higher expression pattern in mid gut than fat body. The cDNAs encoding the *A. germari* ferritin subunits were respectively expressed as approximately 32 kDa (Fer2) and 26 kDa (Fer1) bands in baculovirus-infected insect cells. Western blot analysis and ion binding activity assay confirmed that *A. germari* ferritin has native molecular mass of 680 kDa.