Structural Analysis of Hemolymph Juvenile Hormone Binding Protein of Silkworm, *Bombyx mori*

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Juvenile hormones (JHs), which are sesquiterpenoids, regulate a number of physiological processes in insect development. After synthesized at corpora allata, JHs are secreted into hemolymph and transported to the target organ as a complex with hemolymph JH-binding protein (hJHBP). The crystal and solution structures of the hJHBP in complex with JH showed the mode of binding, that is, one of the two hydrophobic pockets in the molecule is a JH-specific binding site surrounded by several aromatic amino acid residues which are critical for the ligand recognition. Also, analyses of conformational changes of the hJHBP in the presence and absence of JH allowed us to propose association and dissociation scheme that explains protection of JH from nonspecific adsorption and degradation, and appropriate hormone release at the target cells.