Immunohistochemical and Direct Mass Spectral Analyses of *Plautia Stali*-Myoinhibitory Peptides in the Brain and Corpus Allatum of *Plautia Stali*

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We analyzed the localization of *P. stali*-myoinhibitory peptides (Plast-MIPs) in the brain and corpus allatum of *Plautia stali* by immunohistochemical and direct mass spectral analyses. Immunohistochemical analyses showed that Plast-MIP-immunoreactive cell bodies are localized in seven regions of the brain. From anatomical locations, the immunoreactive cells in two regions among them, pars intercerebralis and dorsal posterior region to the mushroom body calyx, partly overlapped with the cells stained by retrograde dye fills from the corpus allatum and corpus cardiacum complex (Fig. 1). By direct mass spectral analyses, the molecular ion peaks corresponding to the predictive mass of Plast-MIPs were found in the pars intercerebralis, and the corpus allatum and corpus cardiacum complex (Fig. 2).

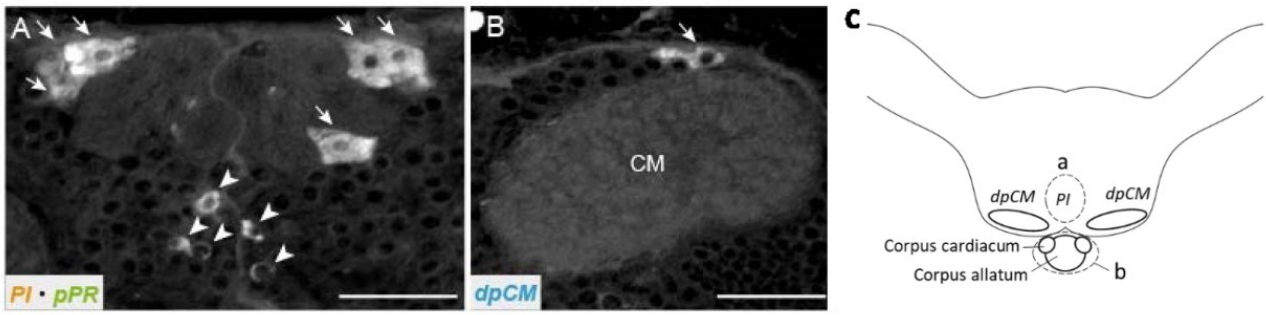

Fig. 1. Fluorescence images show Plast-MIP- immunoreactive cells in the PI (A, arrows), pPR (A, arrowheads), and dpCM (B, arrow) in the anterior view. Dorsal to the top. Scale bars, 50 μm. (C) Schematic illustration of the brain and the corpus cardiacum-corpus allatum complex in the dorsal view. The PI region (region a) and the corpus cardiacum-corpus allatum complex (region b) were examined with direct Fourier transform ion cyclotron resonance mass spectrometry. Anterior to the top.

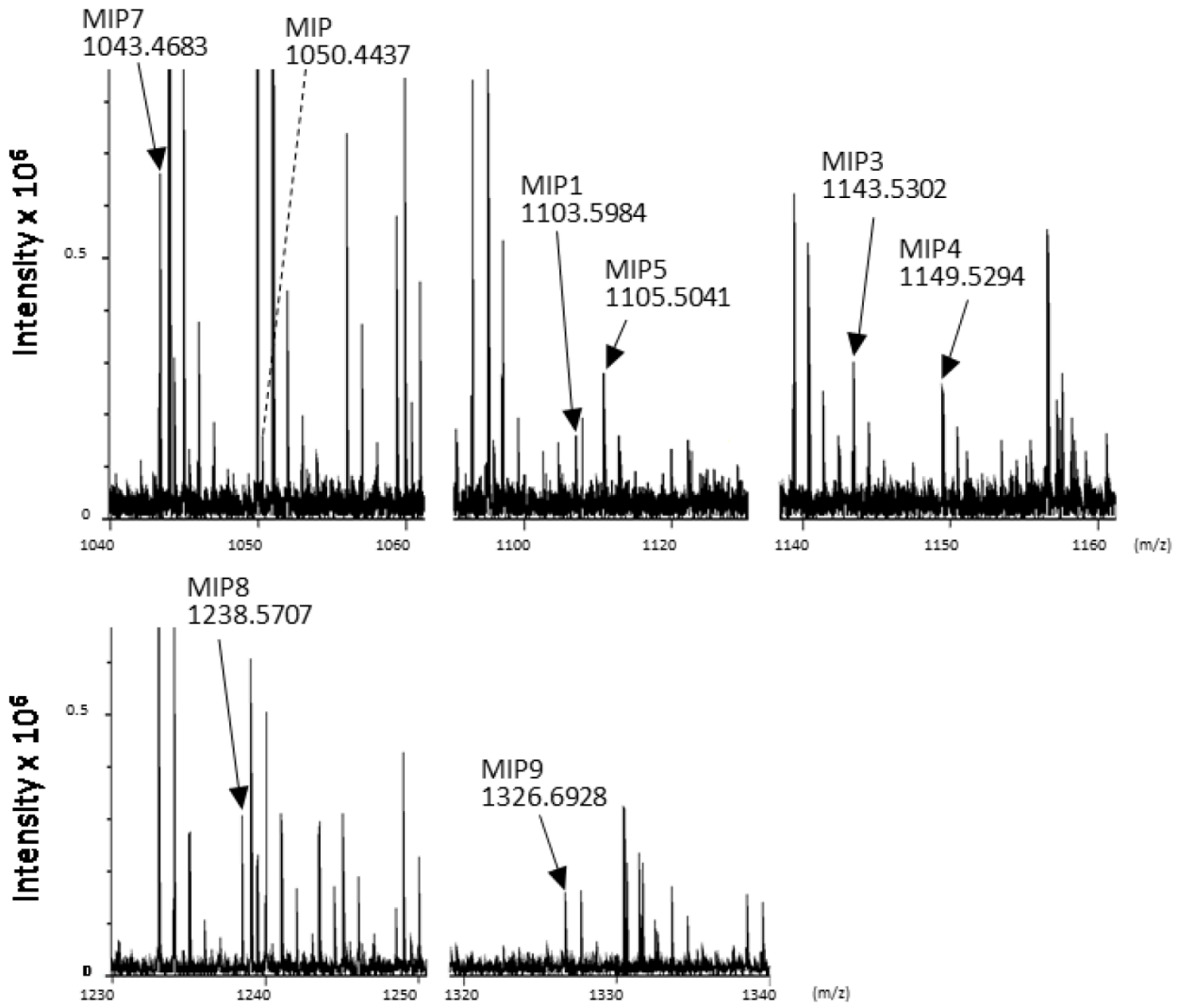

Fig. 2. Representative mass spectrum from the corpus cardiacum-corpus allatum complex (region b in Fig. 1C) shows the mass peak of Plast-MIP1–5, 7–9.