

Oral presentation

[A] Symbiotic microorganisms

Sun. Mar 31, 2024 9:00 AM - 11:45 AM Site A (Tachibana)

11:15 AM - 11:30 AM

[A-44] マダラケシツブゾウムシ超入れ子型共生系を用いた、植物—昆虫— 共生細菌間相互作用研究

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The molecular mechanisms underlying insect gall formation remain unclear. A major reason for the inability to identify the responsible genes is that only few systems can be experimentally validated in the laboratory. To overcome these problems, we established a new galling insect model, *Smicronyx madaranus*. Our manipulation experiments revealed that *Smicronyx madaranus* showed that gall formation consists of two processes: initiation by adults and enlargement by larvae. In addition, we found the symbiotic bacterium *Sodalis* in all individuals. When the *Sodalis* was eliminated by antibiotic treatment, the timing of elytra tanning and gall formation were significantly delayed. The results suggest that the *Sodalis* symbiont plays crucial roles for *S. madaranus*. In this conference, we will report on the progress made in gene function analysis of the weevil and genome analysis of symbiotic bacteria to elucidate the mechanism of interaction in this "hypernested symbiotic system" consisting of plants, parasitic plants, insects and symbiotic bacteria.