Determining genes involved in interbacterial killing in Hawaiian bobtail squid reproductive symbionts
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Symbiotic bacteria must compete for colonization space in their host organism. Although bacteria have evolved many competitive mechanisms, the associated genes and their regulation are often unknown. Here we investigate the competitive mechanisms of *Leisingera* sp. ANG-M7, a beneficial symbiont from the Hawaiian bobtail squid accessory nidamental gland (ANG) symbiosis. The ANG is a female reproductive gland that deposits bacteria into the squid eggs, where the bacteria protect eggs from biofouling. In the ANG, the bacterial consortium is spatially separated into many tubules, suggesting competition may occur during initial colonization of the gland. One symbiont, ANG-M7, was found to inhibit another symbiont, *Leisingera* sp. ANG-DT, in a zone of inhibition assay and in liquid co-culture. A transposon mutagenesis screen was performed on ANG-M7 to determine the genes involved in inhibition. To date, 5,469 mutants have been screened, of which 14 mutants demonstrated significantly smaller zones of inhibition against ANG-DT compared to M7 wild type. One mutant, P24E3, almost completely lost the killing phenotype and was found to have a disruption in adenosylhomocysteinase, *ahcY*. Future work will focus on sequencing more of the mutants to determine the inhibitory pathway.