19
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2013

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SÉMINAIRE

'Dialogues' between squid and luminous bacteria during the establishment of the interaction and the building of the extended phenotype.

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Symbiotic associations are widespread in nature, and constitute a driving force in the evolution of organisms. However, the interactions between partners that lead to the establishment, the specificity and the evolution of the association are oftentimes difficult to study. We used the binary mutualistic association between the squid Euprymna scolopes and the luminescent bacterium Vibrio fischeri as a natural model to study the dialogue between partners that facilitates the selection and colonization of the symbiont into host tissues, but also its maintenance over a strong diel rhythm. We coupled comparative transcriptomics analyses and functional characterizations to better understand how the initial molecular conversation between the two partners plays a role in determining the specificity of the association. We also studied the influence of the presence of a persistent luminous bacterium on the gene expression and physiology of its host. These studies reveal that a very limited number of symbionts is sufficient to reprogram host gene expression, leading to the specific establishment of the interaction and the building of its extended phenotype.