Séminaire ibs

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Conférencier invité

Vendredi 25 janv. 2013

A 11h - Salle des séminaires de l'IBS

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Transcriptional slippage is required for T6SS-dependent interbacterial competition in *Citrobacter rodentium*

The Type VI secretion system (T6SS) is a macromolecular transenvelope machine composed of at least 13 subunits, called core components, required for proper assembly and function of the secretion apparatus. Some of these proteins are structurally analogous to that assembling the tail of contractile bacteriophages. This machinery is linked to virulence toward eukaryotic cells as well as anti-bacterial activity. After an introduction about T6SS, I will focus the talk on *Citrobacter rodentium*, a rodent pathogen, which harbors a T6SS composed of two divergent operons. This cluster bears all the essential genes required for the production of an intact secretion apparatus. However, the *tssM* gene, which encodes a essential protein for T6S function, has a frameshift at a region containing a polyadenosine tract. If frameshifting in *tssM* does not occur, only a C-terminal truncated TssM protein is produced, which may result in a defective T6SS.

To check the correct production of the T6SS, I developed a method allowing the direct swapping of the two divergent endogenous promoters by P_{tac} and P_{BAD}. By adding IPTG and arabinose in the cell cultures, I produced a functional T6SS. I showed the T6SS-dependent secretion of Hcp, that forms the tube-like structure, requires a transcriptional slippage in *tssM* of *C. rodentium*. Slippage in the *tssM* polyadenosine tract produces synthesis of full-length and C-terminus truncated TssM. Interestingly, both forms are required for secretion and bacterial competitiveness advantage toward *Escherichia coli*.

Hôte : C. Cavazza (IBS/Groupe Métalloprotéines)