Séminaire

CONFÉRENCIER INVITÉ

Mardi 18 Juin 2019 à 11h

Salle des séminaires

Institut de biologie structurale - 71 avenue des Martyrs CS 10090 38044 Grenoble Cedex 9 - T.+33 (0)4 57 42 85 00

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Evidence that chromosome translocation is linked to cell envelope remodeling during bacterial spore development

How bacteria coordinate mechanisms of chromosome segregation between daughter cells with the remodeling of their cell envelope is poorly understood. During bacterial spore development, a starving cell divides asymmetrically into two cells: a larger cell called the mother cell and a smaller cell called the forespore, which then matures into the spore. At the time of asymmetric division, the forespore only contains 30% of the chromosome. The remaining 70% of the chromosome gets translocated into the forespore by a highly-conserved molecular motor which has served a model system for understanding mechanisms of DNA translocation. Importantly, during the process of chromosome translocation, the forespore cellular envelope also undergoes dramatic remodeling, with synthesis and hydrolysis of its cell wall. If and how chromosome translocation is linked to cell wall remodeling during spore development remains unknown. In this work, using a combination of genetics and cell biology, we uncovered a new genetic relationship between cell wall remodeling and chromosome translocation, with broader implications towards understanding controversial aspects of spore development.

Hôte : Cécile Morlot (IBS/Groupe Pneumocoque)