

GHI Floor Seminars

Special seminar by invited speaker

Judith Armitage

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Remodelling a motor on the go: Dynamic exchange in the bacterial flagellar motor and Type 3 secretion system and possible roles in motor function

The bacterial flagellar motor is the most complex rotary motor identified in biology. A central transmembrane rotor spins at up to 1300Hz against a ring of ion translocating stators attached to the cell wall, rotating an external helical flagellum to push the bacterium forward. The evolutionarily related T3SS used the equivalent of the rotor to inject toxins into host cells via an extracellular needle. Using a combination of molecular genetics, behavioural analysis, in vivo fluorescence microscopy and biophysics we have shown that neither the flagellar motor nor the T3SS are stable structures, but components are being exchanged with pools of proteins while the motor are functioning. We have also shown that this exchange is linked to the function of the two systems, indicating that bacteria can rapidly remodel multi- protein complexes in response to external conditions.

Host: Alexandre Persat

Tuesday, May 29, 2018



12:15, SV 1717