SIgN Immunology Seminar



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Pathogens, commensals and host mucosal surface: a stormy « mйnage a trois »

Among its multiple roles, the gut microbiota exerts a function of potent barrier to incoming bacteria, particularly pathogenic ones, hence, any bacterial pathogen poised to colonize the mucosal surface as prerequisite to its further pathogenic steps. *Shigella sonnei* is no exception to this rule. Following development of a Guinea pig model of *Shigella* colonic infection, we adapted this model in routine and showed that *S. sonnei* had evolved a peculiar colonization capacity to the expense of the microbiota. This model is quite stringent and showed *Shigella* invasion by colonic cells at the "mouth" of the crypt, with *S. sonnei* being more efficient than *S. flexneri* at invading the colonic epithelium.

S. sonnei was also able to trigger a transient inflammatory response, thus providing – for the first time – a bona fide model of shigellosis in mice.

Thanks to the expression of a functional Type 6 Secretory System (T6SS) we could show following Tn-seq analyzis of a large library of TN5 mutants, that the T6SS was essential for colonic colonization by *S. sonnei*. We also showed that the *S. sonnei* newcomers proceeded to restricted niche substitution, engaging with commensal *E. coli* occupying the epithelial vicinity.

This supports the role of the T6SS at early stages of infection, as *Shigella* needs to approach the colonic mucosa to proceed.

Host
Prof Laurent Renia
Singapore Immunology Network,

Date
Friday, 17 February 2017

Time
2.00pm – 3.00pm

Venue
SIgN Seminar Room
Immunos Building
Level 4
Biopolis