一般財団法人　日本生物科学研究所

第二研究会開催のお知らせ

Bacterial ingenuity of making and using tissue stem cells: From combating infection and antibiotic resistance to tissue repair

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日時：平成 30 年 3月 22　日（木）15:00 - 16:30

場所：日本生物科学研究所　管理棟　会議室 2・3

【要旨】

Fundamental biology of bacterial infections, particularly the mechanisms by which bacterial pathogens interact with host cells and defend themselves have led to the development of powerful molecular biology tools and the advancement of modern medicine. Built on our recent discovery of the bacterial capacity to reprogram host tissue cells to stem cells we pioneered a new premise in host-pathogen interaction – the interface between infection biology and stem cell biology (Cell 2013; Curr Opin Microbiol. 2015).

Our current research focuses on elucidating mechanisms by which certain obligate intracellular bacterial pathogens (as bacterial models) hijack adult tissue cell plasticity, homeostasis, and regenerative/stem cell properties for establishing effective intracellular infections in animal and human host. We believe that the knowledge generated from this bacterial ingenuity will lead to the development of new host-encoded and stem cell strategies for combating bacterial infections and antibiotic resistance in one hand and on the other to unravel natural pathways of tissue regeneration which may have direct implications in regenerative medicine, and thus benefitting both human and animal health. We employ state-of-the-art molecular/cell biological, genetic, metabolic and epigenetic approaches together with in vitro and ex-vivo organoids culture systems and animal models including pig and nine-banded armadillo models that serve as natural reservoirs.

I will highlight the key laboratory findings that establish the fusion of infection biology and stem cell biology themes and their potential implications and future directions.

主催

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