

Poster Presentations

[MS5-P10] How Legionella Diverts Host Small GTPases: Structural and Biochemical Studies. Infectious disease – Membrane trafficking

Jacqueline Cherfils¹, Marcia-Folly-Klan¹, Eric Alix², Craig R. Roy², Danièle Stalder³, Bruno Antonny³, Valérie Campanacci¹

¹Laboratoire d'Enzymologie et Biochimie Structurales, Centre de Recherche de Gif, CNRS, 91198 Gif-sur-Yvette, France.

²Yale University School of Medicine, Boyer Center for Molecular Medicine, New Haven, CT 06536, USA.

³Institut de Pharmacologie Moléculaire et Cellulaire, Université de Nice-Sophia Antipolis et CNRS, 06560 Valbonne, France

E-mail : cherfils@lebs.cnrs-gif.fr

Legionnaire's disease is a severe pneumonia caused by the bacteria *Legionella pneumophila*. In order to evade the defence mechanisms of the host cell, this pathogen creates a membrane-bound vacuole where it hides and replicates in high numbers. To generate this specialized organelle, *Legionella* injects effectors that take command of small GTPases of the Arf and Rab families, which are major regulators of membrane traffic in eukaryotes. We investigated the structures and mechanisms of two of these effectors: AnkX which adds a covalently-bound compound to small GTPases of the Rab family to alter their cellular functions [1] and RalF, which uses a novel membrane sensor to activate cellular Arf at the surface of the vacuole [2].

[1] Structure of the *Legionella* effector AnkX reveals the mechanism of phosphocholine transfer by the FIC domain. Campanacci V, Mukherjee S, Roy CR, Cherfils J. *EMBO J.* 2013 32(10):1469-77

[2] The capping domain in RalF regulates effector functions. Alix E, Chesnel L, Bowzard BJ, Tucker AM, Delprato A, Cherfils J, Wood DO, Kahn RA, Roy CR. *PLoS Pathog.* 2012;8(11):e1003012.

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