

SEMINAR

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Membrane lipid domains in spiroplasmas

Spiroplasmas, as the well-known mycoplasmas, are Mollicutes, bacteria lacking a cell wall and commonly assimilated to minimal cells. Despite their drastically reduced genome size, mollicutes are parasites of various animals, humans and plants, living on or in the host's cells. Because they lack a cell wall, their cytoplasmic membrane constitutes the interface between the bacterial cytoplasm and the external environment. In contrast to other bacterial species, mycoplasmas and spiroplasmas contain sphingolipids and sterols in their membrane. In addition, these mollicutes are covered with acylated, membrane-anchored proteins (lipoproteins), including antigenic variants and adhesins. Since they are unable to synthesize de novo their membrane lipids these bacteria must scavenge lipids from the host in order to replicate and persist. All characterized Spiroplasma species were found to be helical, motile and associated with arthropods, either as harmless commensals of insects, or as pathogens toward various arthropods and plants. Deciphering the interactions between membrane lipids and lipoproteins in the membrane of a phytopathogenic, insect-vectored spiroplasma (*Spiroplasma citri*) revealed the essential role that lipids could play in the interactions between spiroplasmas and their eukaryotic host.

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@ 4.00 p.m.