

MICROBIOLOGIE, INFECTIOLOGIE ET IMMUNOLOGIE *CONFÉRENCE*

Université 
de Montréal

Dre Elitza Tocheva

Professeure adjointe
Université de Montréal

Département de biochimie/Département de stomatologie

Membrane conversion during sporulation and its evolutionary implications revealed by electron cryotomography

We hypothesized that an ancient, sporulation-like event may have given rise to the outer membrane in bacteria. We went on to characterize sporulation in a Gram-positive bacterium (*Bacillus subtilis*) and a Gram-negative bacterium (*Acetonebacterium longum*) using electron cryotomography, genetic and biochemical methods. Our studies led us to two major new insights of evolutionary significance: 1) sporulation is likely an ancient event that gave rise to the bacterial outer membrane, and 2) both Gram-positive and Gram-negative bacteria can synthesize thick and thin peptidoglycan and remodel one into the other. These insights rationalize and extend our knowledge of the bacterial evolutionary tree and suggest that endospore-forming and diderm bacteria share a common ancestry. We further explain the observed cell envelope architectures in all the major bacterial phyla through losses of either the OM, sporulation or both.

Jeudi 17 novembre à 11h30
Pavillon Claire-McNicoll, salle Z-200

Invitée par Dre Catherine Paradis-Bleau
Tél: (514) 343-5967
Courriel: catherine.paradis-bleau@umontreal.ca