



האוניברסיטה העברית בירושלים
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<http://chem.ch.huji.ac.il/chailab/chailab.html>

Title:

Aggregation of a bacterial extracellular protein

המפגש יתקיים

ביום א', 21 יוני 2015, בשעה 9:00

מועדון סגל

(6/21/2015, 9:00, Faculty Club)

Abstract:

Biofilms are surface-associated groups of microbial cells that are embedded in an extracellular matrix (ECM). The ECM is a network of biopolymers, mainly polysaccharides, proteins and nucleic acids. ECM proteins serve a variety of structural roles and often form amyloid-like fibers. Despite the extensive study of the formation of amyloid fibers from their constituent subunits in humans, much less is known about the assembly of bacterial functional amyloid-like precursors into fibers. Using dynamic light scattering, atomic force microscopy, circular dichroism and InfraRed spectroscopy, we show that our unique purification method of a *Bacillus subtilis* major matrix protein component results in stable oligomers that retain their native alpha-helical structure. The stability of these oligomers enabled us to control the external conditions that triggered their aggregation. In particular, we show that stretched fibers are formed on a hydrophobic surface, while plaque-like aggregates are formed in solution under acidic pH conditions. TasA is also shown to change conformation upon aggregation and gain some beta sheet structure. Our studies of the aggregation of a bacterial matrix protein from its subunits shed new light on assembly processes of the ECM within bacterial biofilms.

סגל וסטודנטים מוזמנים להשתתף

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