

BIOCHEMISTRY SEMINAR SERIES



“Sortase-catalyzed surface assembly in monoderm bacteria”

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Sortases are transpeptidase enzymes ubiquitously found in Gram-positive (monoderm) bacteria. Based on protein sequence homology and substrate specificity, sortases have been divided into six classes. Class A and class E sortases, considered as the housekeeping sortase enzymes, catalyze cell wall anchoring of surface proteins by cleaving a conserved LPXTG motif present in these surface proteins and linking the cleaved polypeptides to peptidoglycan. Class C sortases are polymerases, enabling polymerization of pilin substrates with the LPXTG motif into pilus polymers, called pili or fimbriae, which are then anchored to the bacterial cell wall by the housekeeping sortase enzyme. In this seminar, I will present evidence of coordinating activities between the housekeeping sortase SrtE and pilus-specific sortase SrtC that control optimal pilus length on the cell surface for pilus adhesive functions. Secondly, an evolutionarily conserved protein will be shown to maintain membrane homeostasis of the housekeeping sortase via signal peptidase antagonism.

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Mol Sci 3440 and Zoom

3:30 pm

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