

Abstract of Presentation

Presentation Title:

Molecular Mechanism of Bacterial Flagellar Protein Export

Abstract:

The bacterial flagellum, which is responsible for motility, consists of a reversible rotary motor, a universal joint and a helical propeller. Most of the flagellar components are translocated into the central channel and to the distal end of the growing flagellar structure by the flagellar protein export apparatus, which is postulated to be located on the cytoplasmic side of the flagellar basal body. The export apparatus consists of a proton-driven export gate made of six integral membrane proteins and an ATPase complex that acts as a pilot to deliver export substrates and substrate-chaperone complexes to the gate. Flagellar protein export is highly ordered and well regulated in a timely manner by dynamic, specific and cooperative interactions between components of the export apparatus, allowing the huge and complex macromolecular assembly to be built efficiently. I will describe our current understanding on the mechanism of bacterial flagellar protein export.