Abstract of Presentation

Presentation Title:

Receptor localization and signaling in bacterial chemotaxis

Abstract:

In the chemotaxis of *Escherichia coli*, all of the relevant protein components have been identified and characterized extensively in terms of biochemistry and three-dimensional structures. Thus we can ask the nature of the system at the molecular level. It should be noted that these proteins are not randomly distributed in a cell: the chemoreceptors (MCPs), the histidine kinase CheA and the adaptor CheW form a huge cluster that localizes to a cell pole. Other signaling components co-localize with the MCP-CheW-CheA cluster. Clustering of the signaling proteins has been implicated in signal amplification and adaptation. Genome sequencing revealed that some bacterial species, including *Vibrio cholerae*, are equipped with multiple sets of chemotaxis-like signaling systems. Clustering of the signaling proteins therefore may support coherent signaling by avoiding crosstalk. In this talk, I will discuss on the molecular architecture, biogenesis and physiological significance of the signaling cluster in *E. coli* and *V. cholerae*.