OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Proteomics & Bioinformatics
July 15-17, 2013 Courtyard by Marriott Philadelphia Downtown, USA

Tactically managing the chemotactic CheY of *Edwardsiella* causing fish pathogenesis

Shilpasubhashini Gupta and Chandrajit Lahiri
Karunya University, India

Edwarsiellosis has been reported as an epizootic disease prevalent among fishes. It is caused by the ubiquitous bacteria *Edwardsiella tarda* belonging to Enterobacteriaceae family. Several initiatives has been undertaken to separately report several important genes responsible for the virulence of *E. tarda*. We have adopted a graph theoretical approach wherein all virulence factors entailing the Type III and VI secretion systems as well as the two-component systems (TCS) can be seen as interactome of networks. Through parametric analysis we have identified that CheY protein might play a major role in its virulence regulating the flagellar protein involved in the invasion of host epithelial cell. CheY is the cognate response regulator partner of the sensory protein CheA forming the CheA-CheY TCS essential for chemotaxis. CheY was modeled keeping the *Escherichia coli* ortholog as template. An attempt was made there from to find the compound which could successfully block the phosphorylation of the receiver (Rec) domain of CheY. Switching off this process will result in the shutdown of successive expression of virulent genes. Our findings have shown that calcium fluroride can successfully bind to the Rec domain where phosphorylation occurs. Thus, calcium inclusion in the diet of cultured fishes and treatment of infected fishes with drugs having calcium moiety would be some of the realistic approaches to combat this epidemic disease to a greater extent successfully.

Biography

Shilpashubhashini Gupta is currently pursuing her M. Tech. degree in Bioinformatics from Karunya University, Coimbatore, India under the guidance of Dr. Chandrajit Lahiri.