

CHOLERA: A BIOCHEMIST'S PERCEPTION OF AN ENTEROTOXIN ENTEROPATHY

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*Cholera is a severe dehydrating diarrhea that rapidly leads to death if left untreated. Pathogenesis is simple and the clinical symptoms of this potentially fatal illness are essentially the response of the intestinal epithelial cells of the infected human to intoxication by a single protein exotoxin, cholera toxin (CT). CT is an AB-type toxin with ribosyltransferase activity and by acting on the G_{α} subunit of the trimeric G protein present in the cytosol, causes derailment of the regulatory mechanisms in the affected cell, leading eventually to massive secretion of water and electrolytes. *Vibrio cholerae* produces a second enterotoxin, *V. cholerae* cytolysin/hemolysin (VCC), the significance of which in pathogenesis of cholera is, however, not very clear. VCC is a channel-forming toxin, which alters cellular physiology in a manner deleterious to the infected host by rendering the plasma membrane permeable to ions and small molecules. In this article, we summarize existing information on the structures and modes of action of CT and VCC. Apart from interpreting pathogenesis of cholera, these studies have provided new insight into the mechanisms of protein assembly, protein translocation through membranes and signal transduction pathways.*
