Title:	Chapter Two - Modulation of host cellular responses by gram-negative bacterial porins Author links open overlay panel
Authors:	Sharma, Arpita (/jspui/browse?type=author&value=Sharma%2C+Arpita) Yadav, Shashi Prakash (/jspui/browse?type=author&value=Yadav%2C+Shashi+Prakash) Sarma, Dwipjyoti (/jspui/browse?type=author&value=Sarma%2C+Dwipjyoti) Mukhopadhaya, Arunika (/jspui/browse?type=author&value=Mukhopadhaya%2C+Arunika)
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Abstract:	The outer membrane of a gram-negative bacteria encapsulates the plasma membrane thereby protecting it from the harsh external environment. This membrane acts as a sieving barrier due to the presence of special membrane-spanning proteins called “porins.” These porins are β-barrel channel proteins that allow the passive transport of hydrophilic molecules and are impermeable to large and charged molecules. Many porins form trimers in the outer membrane. They are abundantly present on the bacterial surface and therefore play various significant roles in the host–bacteria interactions. These include the roles of porins in the adhesion and virulence mechanisms necessary for the pathogenesis, along with providing resistance to the bacteria against the antimicrobial substances. They also act as the receptors for phage and complement proteins and are involved in modulating the host cellular responses. In addition, the potential use of porins as adjuvants, vaccine candidates, therapeutic targets, and biomarkers is now being exploited. In this review, we focus briefly on the structure of the porins along with their important functions and roles in the host-bacteria interactions.
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