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The extracellular juncture domains of Type 5 autotransporters

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Enterohemorrhagic and enteropathogenic *Escherichia coli* are among the most important food-borne pathogens. The virulence factor intimin is essential for attachment of pathogenic *E. coli* to intestinal host cells in human. Intimin is a surface exposed bacterial adhesion receptor which consists of four extracellular bacterial immunoglobulin-like (Big) domains, extending into the fifth subdomain which resemble a lectin like fold. The fifth domain binds to the Tir-receptor. We have determined the crystal structures of the inner two Ig domains, called (D00 and D0) at 1.5 Å and the next domain pair D0-D1 at 1.8 Å resolution. With this we can confirm that the passenger of intimin has five distinct domains, only recently proposed. We describe that D00-D0 linker region exhibits a higher degree of rigidity and that D00 likely functions as a juncture domain exposed to the outer membrane and always anchored next to the inner membrane beta barrel inserted into the membrane. The accumulated data allows us to model the complete passenger of intimin and allows us to propose functionality through the degree of flexibility and rigidity inherent to the Big domains, D00-D0-D1, extending directly from the membrane.