

**P148** EspT drives GTPase dependent remodelling of the eukaryotic cytoskeleton to induce lamellipodia formation

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Subversion of the eukaryotic cytoskeleton is a virulence strategy employed by a plethora of bacterial pathogens. Due to the pivotal role of Rho GTPases in regulating actin dynamics they are a common target of bacterial virulence factors. Recently a family of type three secreted effector proteins has been defined based on their shared ability to subvert small GTPase signalling and their homology around an invariant tryptophan and glutamic acid residue separated by three variable amino acids (WxxxE). We recently identified the type three secreted effector EspT as novel representative of the WxxxE family of proteins. We demonstrate that EspT induces the formation of distinctive lamellipodia and membrane ruffles. We show that the cytoskeletal re-arrangements driven by EspT are dependent on the activation of the small Rho GTPases Rac1 and Cdc42. Furthermore, we demonstrate that induction of Rac1 activity by EspT results in a downstream activation of Wave2 and Abi1 which subsequently act as essential mediators of lamellipodia and ruffle formation. Together these results demonstrate that the novel effector protein EspT is a potent modulator of the host cell actin cytoskeleton via a mechanism which is reliant upon the subversion of host cell GTPase signalling cascades.