

## **A Role for the *Fusarium graminearum* Ste2p receptor in mediating Wheat-Pathogen Interactions**

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The fungal pheromone receptors Ste2p and Ste3p, both members of the superfamily of G-protein Coupled Receptors (GPCRs), are classically known for their mediation of cell cycle arrest and chemotropic growth toward mating partners. Receptor stimulation by the pheromones leads to well documented signal transduction events mediated by heterotrimeric G-proteins and a downstream mitogen activated protein kinase (MAPK) cascade, ultimately leading to the cellular mating responses. Interestingly, recent reports have implicated the Ste2p receptor in virulence of two plant pathogenic fungi, *Fusarium oxysporum* and *Puccinia sp.*, with a proposed role in mediating chemotropism toward the host. Of course this fungal virulence-linked chemotropic response is not mediated by classical pheromone ligands; indeed plants do not secrete fungal pheromones. However the exact nature of the ligand stimulating the response remains enigmatic. In this talk I will present our recent work investigating the generality of the role of Ste2p in fungal pathogenesis, and the nature of the ligands stimulating these responses, with a particular focus on the necrotrophic fungus *Fusarium graminearum*, which is the causative agent of Fusarium Head Blight in cereal crops. This work is supported by the both the National Research Council of Canada, and Natural Sciences and Engineering Research Council of Canada.