Plant Agriculture

DEPARTMENTAL SEMINAR SERIES

TITLE: The Arabidopsis NPR1 protein is a receptor for the plant defense hormone salicylic acid

SPEAKER: Dr. Charles Després, Department of Biological Sciences, Brock University

LOCATION: Thornbrough 1307

TIME: 3:35-4:35 pm
DATE: Wednesday, January 21, 2015

ABSTRACT:

Salicylic acid (SA) has been known for decades to be a mandatory plant metabolite in the deployment of immunity, specifically systemic acquired resistance (SAR). SAR is a broad-spectrum systemic immune response induced by local inoculation with avirulent pathogens. In 1997, a Syngenta legacy company identified NPR1 as the central protein positively regulating SAR. In 2000 we showed that NPR1 stimulates the binding of transcription factors of the TGA family to their DNA-sequence, linking NPR1 to gene regulation. In 2006 we determined that NPR1 is a transcriptional co-activator, establishing the molecular function of NPR1. In 2012, we demonstrated that NPR1 is a receptor for SA and the direct link between SA and gene activation. Armed with this latest discovery, my lab is now finally embarking on a path towards the application of basic science to agriculture.

Biography:

Dr. Després received a *Ph.D.* in Biochemistry from the faculty of medicine at the University of Montreal under the supervision of Dr. Normand Brisson. During his *Ph.D.* thesis, Charles purified and characterized a transcriptional activator regulating the potato immunity marker gene *PR10a*. From 1998 to 2002, Charles was a Research Associate at the Plant Biotechnology Institute in Saskatoon, under Pierre Fobert, where he studied the regulation of the Arabidopsis immunity marker gene *PR1* by NPR1 and the TGA family of transcription factors. Charles has been at Brock University since 2002 where he has continued his work on the NPR1 signaling pathway. During his time at Brock he was a recipient of a Tier II CRC and was awarded the C.D. Nelson Prize from the Canadian Society of Plant Biologists.