

Beta Cell Interest Group (BIG) Seminar

Current and ongoing beta cell research is presented in this weekly seminar by faculty, postdoctoral fellows and students. If you are interested in attending the Beta Cell Interest Group (BIG) seminars and joining the BIG community, please contact [David Jacobson](#).

Keywords: [beta cell](#) [BIG](#)

Expand

Meeting Details

Start Date / Time	October 1, 2014 at 9:00 AM
End Date / Time	October 1, 2014 at 9:55 AM
Duration	55 minutes
Location	512 Light Hall
Presenter Name	Nicholas Vierra (Jacobson)
Presentation Title	β -cell TALK-1: illuminating the function of an islet-specific K ⁺ channel
Status	This meeting has already occurred

Meeting Agenda/Notes

TALK-1 is a two-pore domain K⁺ channel expressed specifically in the islets of Langerhans. Although a nonsynonymous CDS polymorphism in TALK-1 has been shown to contribute to type 2 diabetes susceptibility, nothing is known about the role of this channel in β -cells. We show that genetic ablation of TALK-1 alters islet Ca²⁺ dynamics and glucose-stimulated insulin secretion (GSIS). Furthermore, we have identified that TALK-1 is sensitive to membrane phospholipids, which increase channel activity through a charge-dependent interaction with the C-terminus of TALK-1. These data provide compelling evidence that TALK-1 modulates GSIS by limiting excitability, and suggests a novel mechanism for phospholipid-dependent regulation of islet Ca²⁺ entry.