

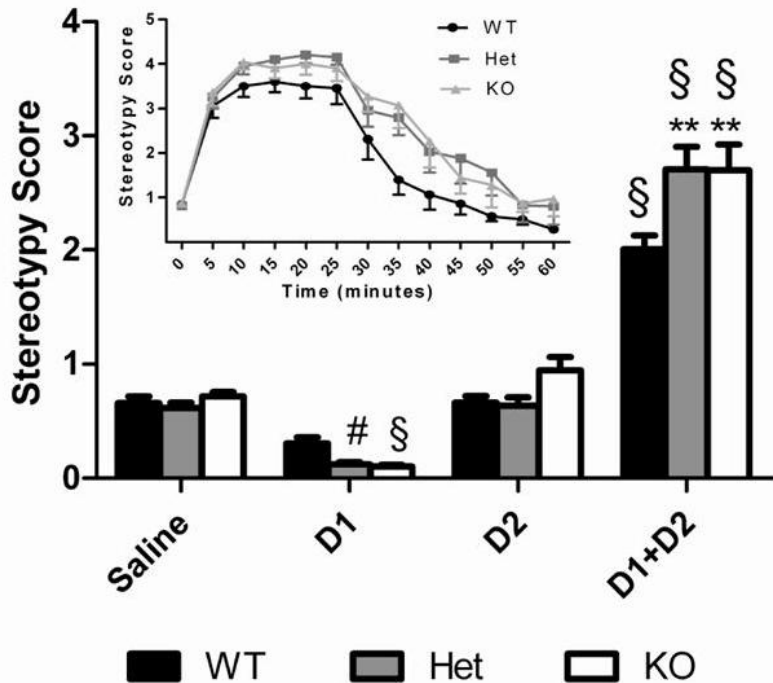
The Ras Homolog Rhes Affects the Regulation of Adenylyl Cyclase by Dopamine Receptors

Laura Harrison, YouE He, Daniela Spano, Li Li,
Christian Sheline

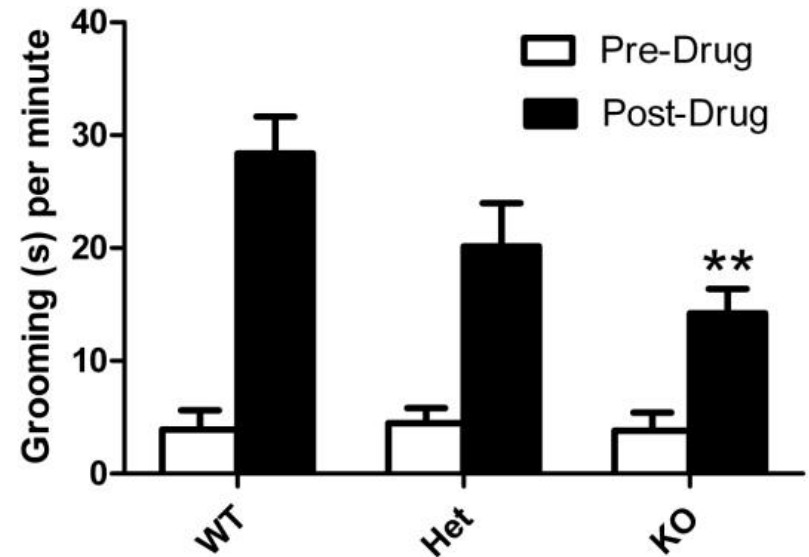
Neuroscience Center of Excellence
Louisiana State University Health Sciences Center

Dopamine Receptor-Mediated Behavior in Rhes Mutant Mice

A. Stereotypy (AC)

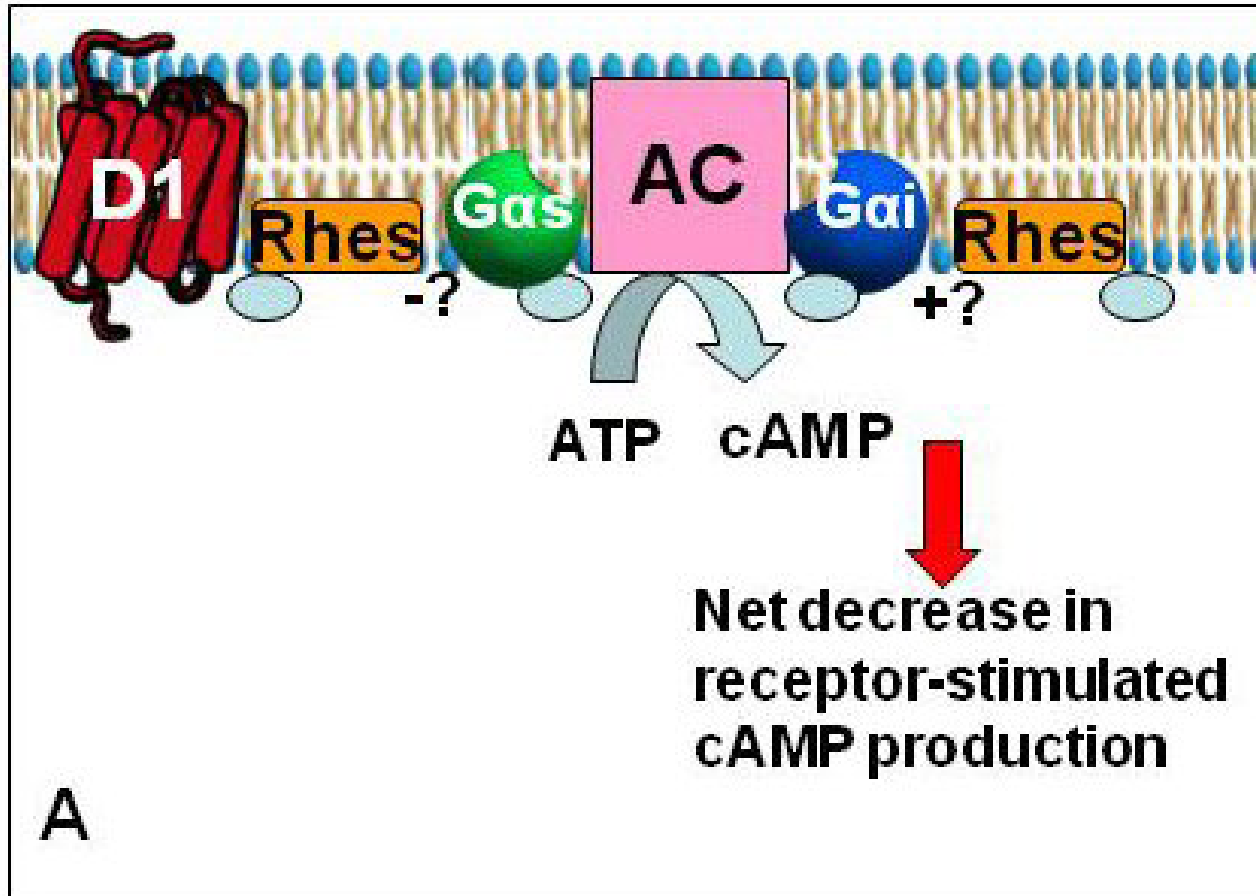


B. Grooming (Gq-PLC)

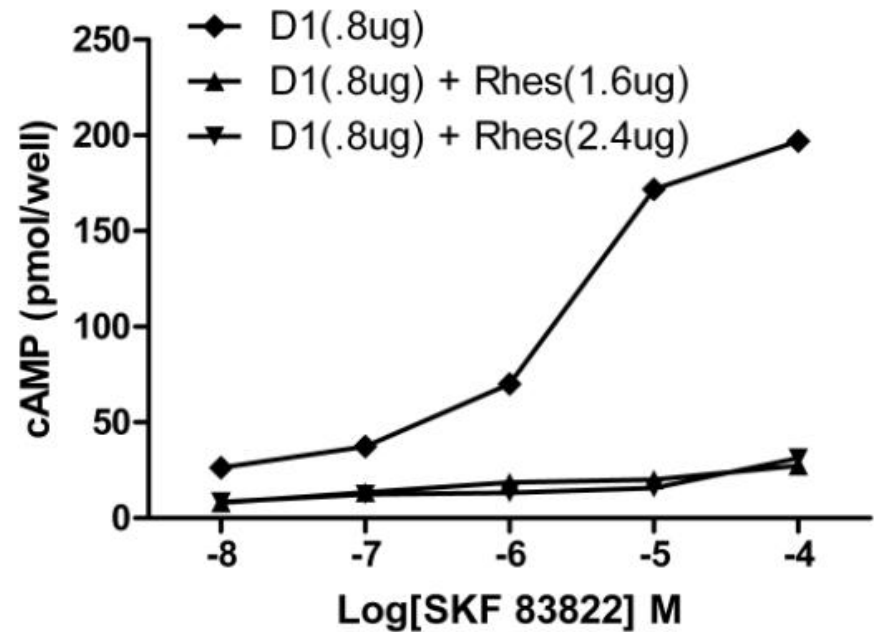
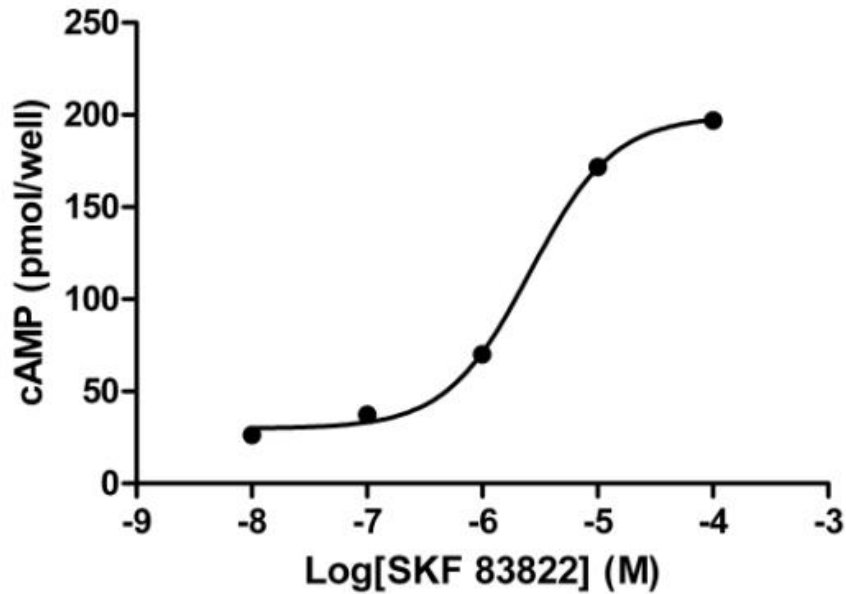


Hypothesis: Rhes inhibits signaling through Gs-AC pathways and promotes signaling through Gq-PLC pathways

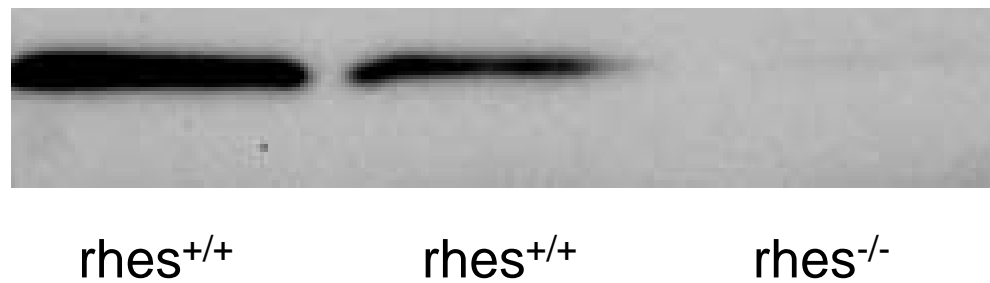
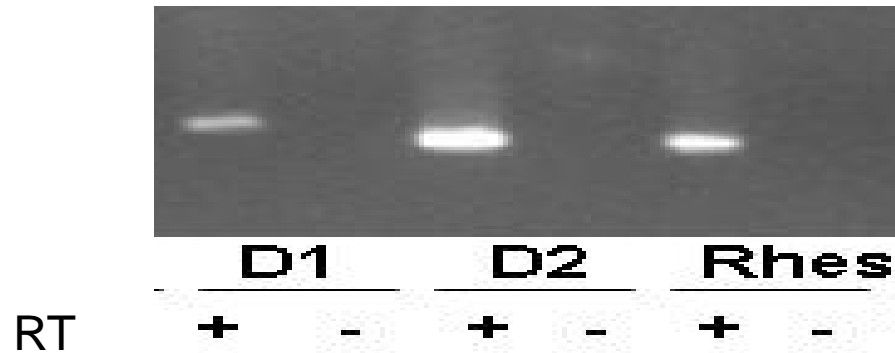
Potential Mechanisms—Regulation of Adenylyl Cyclase



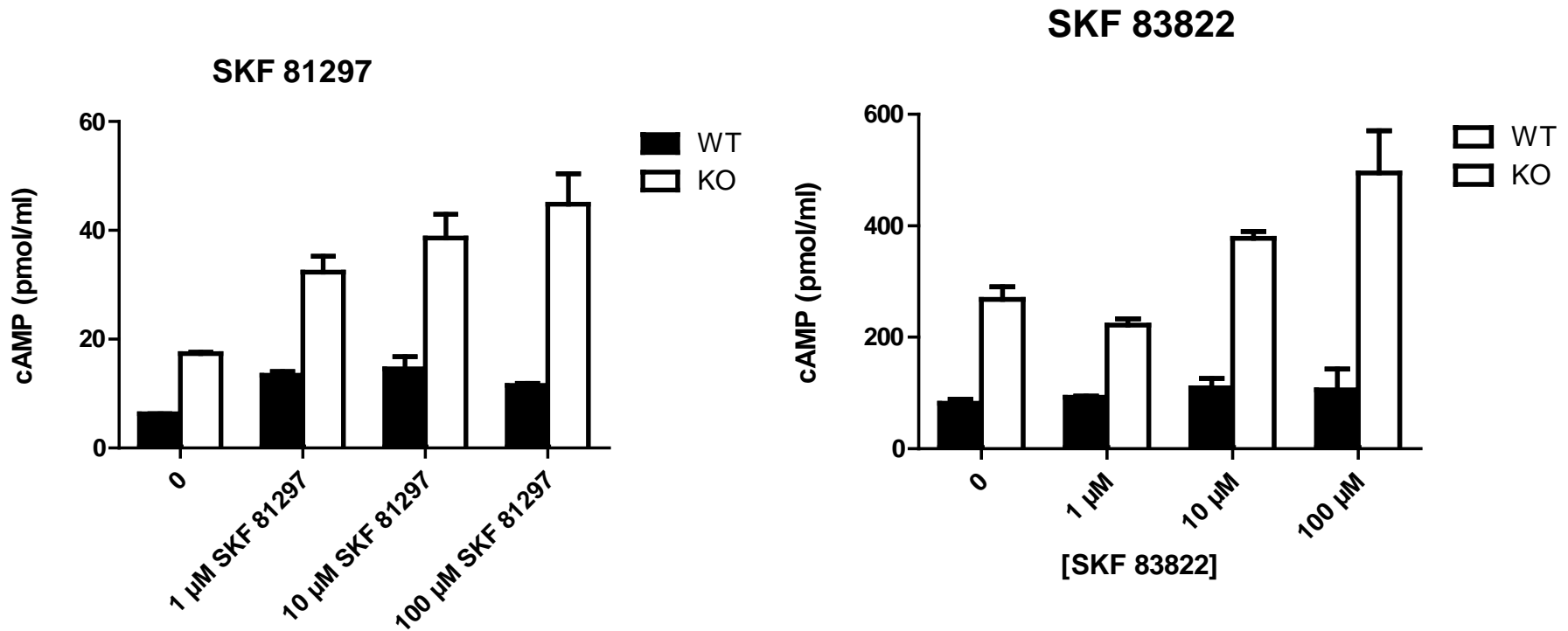
Effects of Rhes on cAMP Accumulation in CHO Cells



Rhes in Primary Striatal Cultures

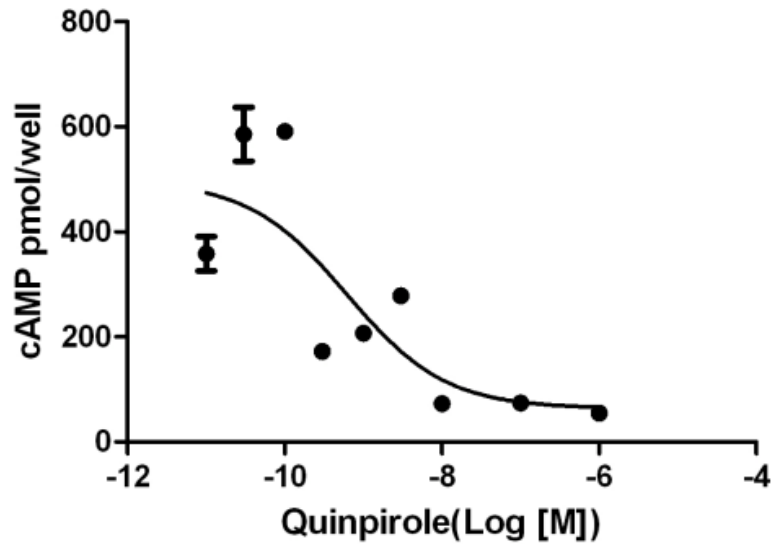


Rhes Effects on D1 Receptor-Mediated cAMP Accumulation in Primary Striatal Cultures

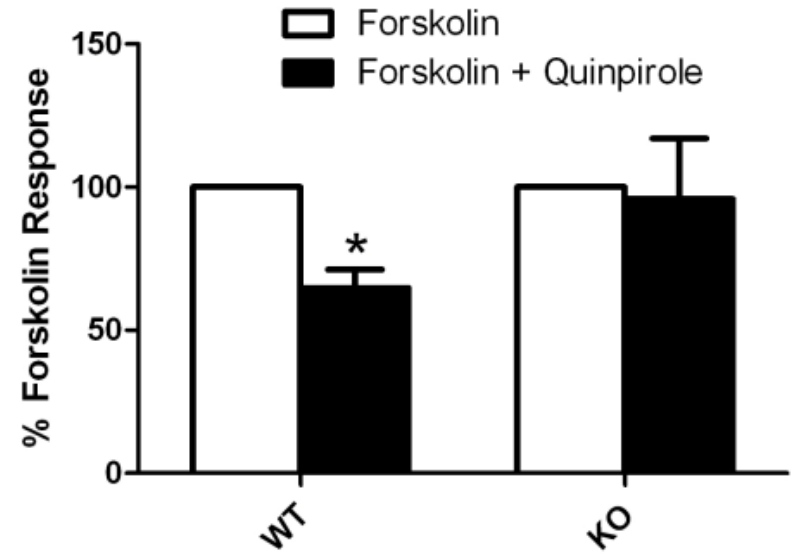


Effects of Rhes in cAMP Inhibition in Primary Striatal Cultures

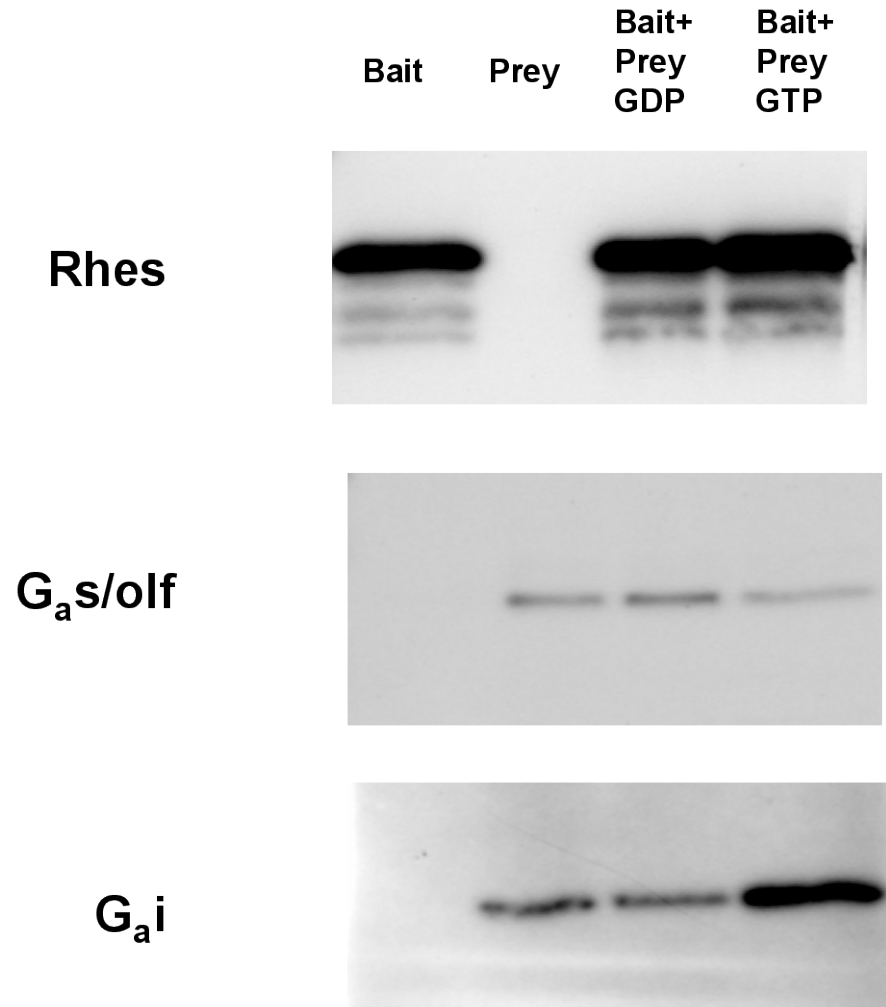
A



B



Binding of Rhes to G Protein Alpha Subunits



Conclusions

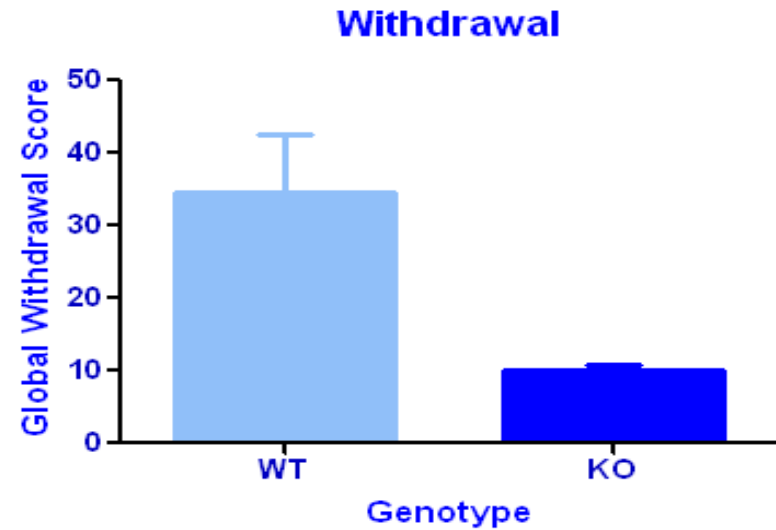
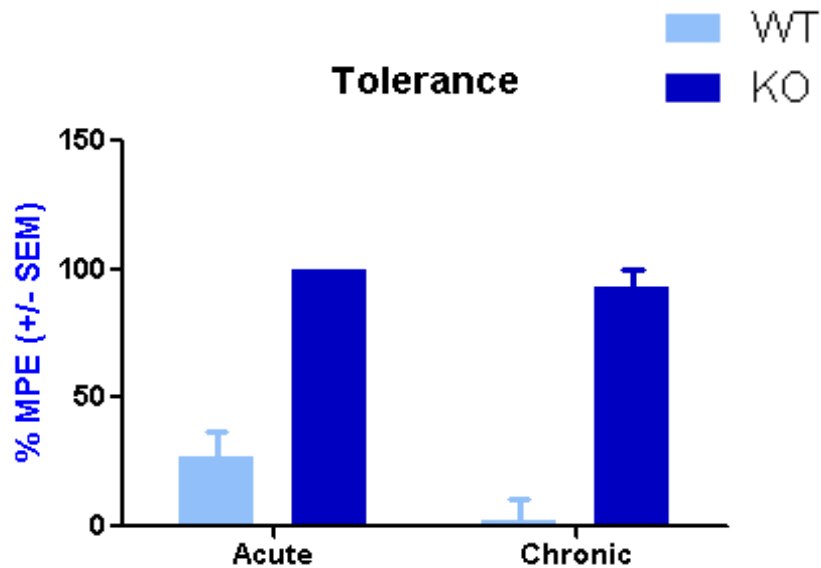
- The Ras Homolog Enriched in Striatum (Rhes) normally inhibits signaling through the AC pathway in striatal cells
- Rhes may do this by binding to activated G α i and thereby decreasing the tone of AC activation

Supported by:

COBRE P20 RR016816

Louisiana Board of Regents

Opiate Tolerance and Dependence



Tail flick—spinal analgesia

