May 20th, 12:30 PM

Mice Deficient in SFRP1 Exhibit Increased Adiposity, Dysregulated Glucose Metabolism

Lotfi M. Bassa  
*University of Massachusetts Amherst*

Kelly J. Gauger  
*University of Massachusetts Amherst*

Elizabeth M. Henchey  
*University of Massachusetts Amherst*

See next page for additional authors

Follow this and additional works at: [https://escholarship.umassmed.edu/cts_retreat](https://escholarship.umassmed.edu/cts_retreat)

Part of the *Biochemistry Commons*, *Cellular and Molecular Physiology Commons*, and the *Translational Medical Research Commons*

Bassa, Lotfi M.; Gauger, Kelly J.; Henchey, Elizabeth M.; Brown, Melissa; and Schneider, Sallie S., "Mice Deficient in SFRP1 Exhibit Increased Adiposity, Dysregulated Glucose Metabolism" (2014). *UMass Center for Clinical and Translational Science Research Retreat*. 22.  
[https://escholarship.umassmed.edu/cts_retreat/2014/posters/22](https://escholarship.umassmed.edu/cts_retreat/2014/posters/22)

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
Presenter Information
Lotfi M. Bassa, Kelly J. Gauger, Elizabeth M. Henchey, Melissa Brown, and Sallie S. Schneider

Comments
Abstract of poster presented at the 2014 UMass Center for Clinical and Translational Science Research Retreat, held on May 20, 2014 at the University of Massachusetts Medical School, Worcester, Mass.

Creative Commons License
This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License. This poster abstract is available at eScholarship@UMMS: https://escholarship.umassmed.edu/cts_retreat/2014/posters/22
MICE DEFICIENT IN SFRP1 EXHIBIT INCREASED ADIPOSITY, DYSREGULATED GLUCOSE METABOLISM.
Lotfi M. Bassa, Kelly J. Gauger, Elizabeth M. Henchey, Melissa Brown, and Sallie S. Schneider

Department of Veterinary and Animal Science, University of Massachusetts Amherst. Pioneer Valley Life Science Institute, Springfield, MA
Contact Info: lbassa@cns.umass.edu, Sallie.Schneider@bhs.org

The molecular mechanisms involved in the development of obesity and related complications remain unclear. Wnt signaling plays an important role in preadipocyte differentiation and adipogenesis. The expression of a Wnt antagonist, secreted frizzled related protein 1 (SFRP1), is increased in response to initial weight gain, then levels are reduced under conditions of extreme obesity in both humans and animals. Here we report that loss of Sfrp1 exacerbates weight gain and glucose homeostasis in mice in response to diet induced obesity (DIO). Sfrp1−/− mice fed a high fat diet (HFD) exhibited an increase in body mass accompanied by increases in body fat percentage, visceral WAT mass, and adipocyte size. Fasting glucose levels are elevated, glucose clearance is impaired, hepatic gluconeogenesis regulators are aberrantly upregulated, and glucose transporters are repressed in Sfrp1−/− mice fed a HFD. Additionally, we observed increased steatosis in the livers of Sfrp1−/− mice. Our findings demonstrate that the expression of Sfrp1 is a critical factor required for maintaining appropriate cellular signaling in response to the onset of obesity.