

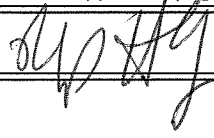
U.S. Department of Agriculture Accomplishments Report AD-421 U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions			Date (Month, Day, Year) 01/25/2013
1. Accession 0222387	Agency Identification No. 2. SAES 3. LAB	5. Work Unit/Project No. LAB04048	6. Status Final Report
7. Title Development of a <i>Caenorhabditis elegans</i> (<i>C. elegans</i>) Model - An Intermediate Step Between Cell Culture Studies and Laboratory Rodent Studies			
12. Investigator Name(s) (Last Name and Initials) Zheng, J. Z.			
20. Termination Date 09/30/2012		40. Period Covered (mo/da/year): 05/01/2010 TO 09/30/2012	
Outputs: During this period one paper was published and four abstracts were presented.			
Outcomes/Impacts: Using <i>Caenorhabditis elegans</i> (<i>C. elegans</i>) model organism: Change in knowledge occurred 1. Subgroup lectins was transported to the CNS by gastrointestinal absorption and impacted dopaminergic (DAergic) neurons that are damaged in Parkinson's disease (PD). Subgroup lectins reduced the number of GFP-DAergic neurons, the endogenous GFP-dopamine transporter fluorescent, or the size of GFP-DAergic neurons, suggesting they were toxic. These changes may be dose-dependently inhibited by specific haptenic sugars. 2. Studies of dietary fiber sources like Prowashonupana barley (Sustagrain), plant extracts, or agricultural by-products are Bioactive compounds that may benefit hyperglycemia-impaired lipid metabolism, reduce body fat, and improve healthy aging. Incorporating optimal functional food components into the daily diet and developing these drugs will result in future prevention of obesity and improvements in public health.			
Publications: Zheng J, Sonnier T, Vase A, Korivi N, Ajmera P, Morrison SF, DiLorenzo DJ, Greenway FL. A less invasive surgical approach for splanchnic nerve stimulation to treat obesity. <i>Obes Surg</i> . 2012 Nov;22(11):1783-4. J Zheng, J King, M King, S Heymsfield, J Finley, and F Greenway. Effect of sugar, aspartame, or acesulfame potassium alone or in beverages on <i>C. elegans</i> model organism. <i>Experimental Biology Annual Meeting</i> , April 2012. J King, M King, M Keenan, WQ We, Z Fitzpatrick, F Greenway, J Finley, F Enright, R Martin, and J Zheng. Compound 206 reduced body fat: Identification of the mechanism of action in <i>C. elegans</i> model. <i>Institution of Food Technologists, Louisiana Gulf Coast Section</i> , March 2012. Zachary L. Fitzpatrick and Jolene Zheng. Green fluorescent membrane-labeling technology, pkh67: a proxy for studying adipose regulation in <i>Caenorhabditis elegans</i> . <i>Institution of Food Technologists, Louisiana Gulf Coast Section</i> , March 2012. C Gao, M King, Z Fitzpatrick, W Wei, J King, F Greenway, W Johnson, J Finley, M Keenan, F Enright, R Martin, and J Zheng. Prowashonupana barley as dietary fiber sources reduced body fat in <i>Caenorhabditis elegans</i> model. <i>Institution of Food Technologists, Louisiana Gulf Coast Section</i> , March 2012.			
Participants: Jolene Zheng (PI), Roy Martin, Frederick Enright, Michael Keenan, John Finley, Wenqian Wei, Chenfei Gao, LSU AgCenter.			
Target Audiences:			



Food and bio-medical scientists

Project Modifications:

Nothing significant to report during this reporting period.

Approved (Signature)	Title	Date
		1-29-2013