

Understanding the endocrine-disrupting effects of chemicals used in plastics.

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Background

Bisphenol A and phthalates are common chemicals used in plastics. According to the



Environmental Protection Agency, the release of Bisphenol A to the environment is higher than 1 million pounds per year whereas the annual global production of phthalates is estimated to be 11 billion pounds. Recent studies have suggested a possible link between Bisphenol A / phthalates and type 2 diabetes. Yet, the mode of action of these chemicals remains poorly

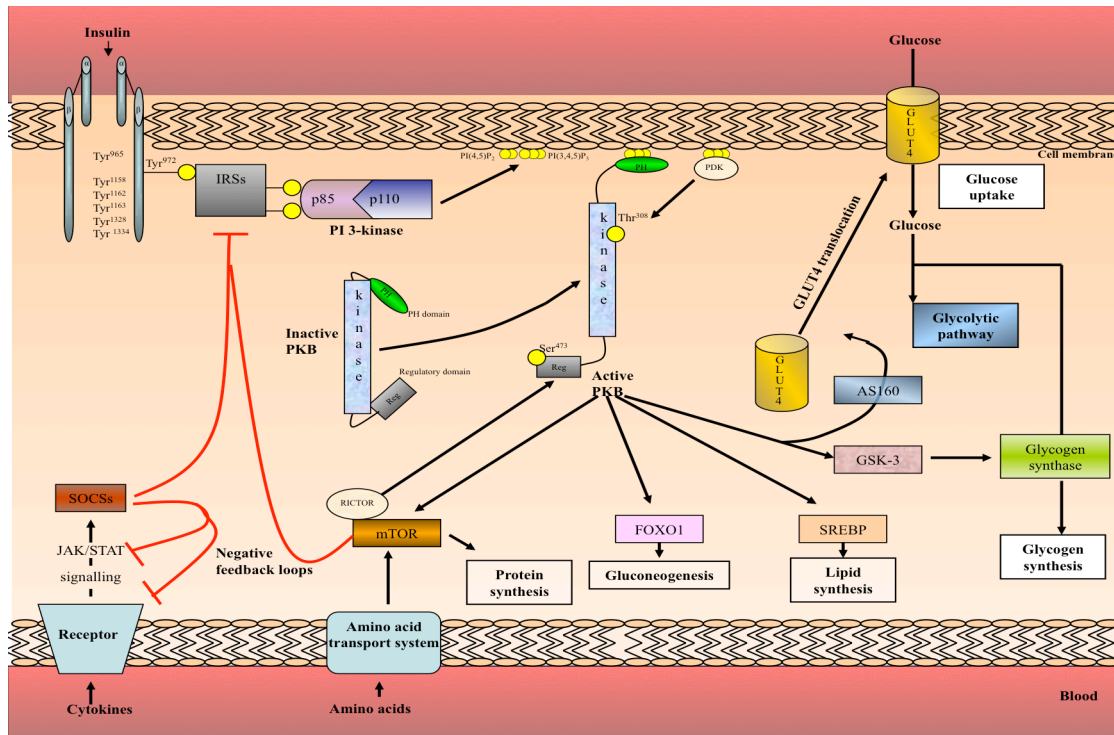
understood.

Skeletal muscle is an insulin-sensitive tissue that regulates glucose homeostasis and plays a key role in the development of type 2 diabetes. As part of a NFR financed project TRANSITION, we want to investigate whether bisphenol A and phthalates can disrupt insulin action and glucose homeostasis in intact skeletal muscle.

Primary Objectives

- 1) Determine the effects of bisphenol A and phthalates on insulin-stimulated glucose uptake in mouse skeletal muscles.

- Determine the insulin signaling proteins targeted by bisphenol A and phthalates in mouse skeletal muscles.



Techniques/Work

- Contribute to establish a research technique using ^3H -glucose and ^{14}C -mannitol aimed at assessing insulin-stimulated glucose uptake in mouse skeletal muscles.
- Investigate different insulin signaling proteins by Western Blot technique.

Requirements and training

- * Rigorous and motivated student.
- * Radiation course (registration before the 10th of Sept). See “Strålevern –Ioniserende stråling” in the following link:

<http://www.uib.no/en/node/74820> - <http://www.uib.no/en/node/74820%23str-levern-ioniserende-str-ling>

Alternatively, internal radiation training will be performed.

- * Course in laboratory animal science (Part 1 September 24-25, 2014 and Part 2 June 2015). <http://www.uib.no/en/rg/animalfacility>

Project Start

Schedule of this project should be discussed with the Master student.