

**DEPARTMENT OF PATHOLOGY**  
COLLEGE OF MEDICINE

**Summer Research Opportunities  
for Undergraduate Women**

**APPLICATION DEADLINE: MARCH 1, 2002**

*The Department of Pathology is pleased to offer the following research projects for the summer of 2002. Interested students are urged to contact the faculty member(s) directing the project(s) that most interest them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be, and if possible, develop a timetable for the twelve-week research period.*

**Professor Patrick Tso**

**Department of Pathology**

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We discovered that apo AIV is an important signal that inhibits food intake. Apo AIV is synthesized in the arcuate nucleus, an important part of the hypothalamus that regulates both food intake and energy metabolism. We have observed that rats rendered obese by consuming a high fat (HF) diet have reduced hypothalamic apo AIV levels and responsiveness. All of those experiments are confounded, however, by an obese state and consuming a high proportion of dietary fat. Increases in caloric intake and weight gain occur when animals are fed a palatable carbohydrate solution (e.g., a 32% sucrose solution) as a supplement to their chow diet (1;84;95). Such rats typically decrease their intake of chow, but avidly consume the sucrose solution such that total daily caloric intake exceeds that of controls not given sucrose. Over time, this small but reliable increase in caloric intake leads to substantial elevations in body weight and adipose tissue mass. This experiment is designed to investigate the possible involvement of apo AIV in the process of obesity induced by carbohydrate. The goals of this experiment are: 1) to determine if obese animals induced by sucrose feeding also have significantly reduced hypothalamic apo AIV levels, and 2) to determine whether sucrose-induced obese animals also fail to respond to dietary lipid (like chronically HF-induced obese animals). These results will allow us to ascertain whether the reduced hypothalamic apo AIV levels we have previously observed in HF-diet-induced obese animals is caused by obesity resulted from chronic feeding of a HF diet or caused obesity irrespective of the macronutrient content of the diet.