

## **Stéphane Boghossian**

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### **Summary**

Widely trained animal scientist with a strong background in neurophysiology of obesity, pre-diabetes and type II diabetes. I am able to use a combination of in vivo (behavioral and pharmacological studies) and molecular biology techniques (sample preparation and analysis) to design, conduct and analyse pre clinical experiments.

### **Specialities and skills**

Design and conduct multiple experiments using animal models of diabetes, obesity and aging.

Mice and rats surgeries, stereotaxic cannulations, Intracardiac perfusion

In vivo administration of compounds through different routes including intra gastric, central (icv, amygdala, hippocampus....)

Feeding behavior, diet modification

immunohistochemistry

in vitro assays (RIA, ELISA)

Cell culture, primary cell cultures

Exercise

Gene and protein expression assays

Behavioral assay designs for anxiety, CTA, memory

### **Research Experience**

#### **Research Assistant Professor**

2009-present

Utah State University, Center for Advanced Nutrition / Department of biology, Logan, UT

I pursue the research funded by the American Diabetes Association. "Role of amygdala in the control of food intake." I train and assist other scientist in the Center for Advanced Nutrition with animal research experiments. I am studying the role of CNS in controlling food intake or Alcohol intake in response to neuropeptides and hormones as well as nutritional status, and diet composition. I am developing a set of behavioral tests in the lab using Elevated Plus Maze, Conditioned food aversion or Pica behavior.

#### **Senior Post Doctoral**

2006 - 2009

Utah State University, Center for Advanced Nutrition, Logan, UT

I focused my work on the role of amygdala in controlling food intake in response to neuropeptides and hormones. I was involved in multiple collaborations on contracts with private companies that benefited from my training as an animal physiologist. I presented research data at internal and external scientific meeting and participated in data analysis and redaction of manuscripts and grant proposals. I trained students and research technicians in Stereotaxic surgery, food intake experiments, exercise and basic molecular biology techniques. I supervised research technicians and animal staff for in-vivo experiments. I kept records and maintenance log for the animal

colonies, centralize orders and communications between animal facility staff and laboratory

### **Post Doctoral fellow**

2003-2006

University of Florida McKnight Brain Institute / department of Neuroscience , Gainesville, FL

I completed several projects using gene therapy to restore leptin gene expression within the CNS. I showed that the restoration of the leptin gene in monogenic mutant *ob/ob* mice enhanced longevity. In addition to that I collaborated to other projects and collaboration that benefited from my training as a behavioral physiologist. I participated in the redaction of several manuscript and presented the data to several national and international conferences.

### **Research fellow**

2000-2001

Institute of Endocrinology, University of Milan, Italy

As a junior researcher in the lab, I was supervising and organizing the daily work of the numerous undergraduate students working in the lab. I used different in vitro techniques to study the biological effects of leptin on human neuronal cell lines and study the intracellular pathways' activation.

## **Education**

**Université Blaise Pascal (France)** PhD, Neuroscience, 2002 summa cum laude

**Université Blaise Pascal (France)** DEA (M.S.), Nutrition and food sciences, 1998

**Université Joseph Fourier (France)** Maitrise/License (B.S.), Physiology, Cellular biology, 1997

## **Awards**

American Diabetes Association Junior Faculty Award: "Dietary fats regulate amygdala insulin sensitivity", role: P.I; \$398,554 for 2010-2012

European Marie Curie fellowship in the Institute of Endocrinology, Università degli Studi di Milano, Italy; mentors: Pr Martini/Dr Magni; 2000 – 2001

First course in molecular endocrinology Nov 2001, Florence, Italy

Young Researcher Grant from the Università degli Studi di Milano. (Biological effects of leptin on human neuronal cell lines: study of the intracellular pathways' activation).

## **Publications**

1. Veyrat-Durebex C, Boghossian S & Alliot J. Age-related changes in adaptive mechanisms of macronutrient self-selection: evidence for a sexual dimorphism. *Mech Ageing Dev* (1998) **103**: pp. 223-234.
2. Boghossian S & Alliot J. A moderate swimming exercise regularly performed throughout the life induces age and sex-related modifications in adaptive macronutrients choice. *Mech Ageing Dev*

(2000) **120**: pp. 95-109.

3. Boghossian S, Veyrat-Durebex C & Alliot J. Age-related changes in adaptive macronutrient intake in swimming male and female Lou rats. *Physiol Behav* (2000) **69**: pp. 231-238.
4. Jourdan D, Boghossian S, Alloui A, Veyrat-Durebex C, Coudore MA, Eschalier A & Alliot J. Age-related changes in nociception and effect of morphine in the Lou rat. *Eur J Pain* (2000) **4**: pp. 291-300.
5. Boghossian S, Jourdan D, Dacher M & Alliot J. Effect of morphine on caloric intake and macronutrient selection in male and female Lou/c/jall rats during ageing. *Mech Ageing Dev* (2001) **122**: pp. 1825-1839.
6. Veyrat-Durebex C, Gaudreau P, Boghossian S & Alliot J. Effects of peripheral and central administration of GHRH on feeding in aging LOU rats. *Peptides* (2001) **22**: pp. 2119-2126.
7. Alliot J, Boghossian S, Jourdan D, Veyrat-Durebex C, Pickering G, Meynial-Denis D & Gaumet N. The LOU/c/jall rat as an animal model of healthy aging?. *J Gerontol A Biol Sci Med Sci* (2002) **57**: p. B312-20.
8. Boghossian S, Nzang Nguema G, Jourdan D & Alliot J. Old as mature LOU/c/jall rats enhance protein selection in response to a protein deprivation. *Exp Gerontol* (2002) **37**: pp. 1431-1440.
9. Boghossian S, Lecklin A, Torto R, Kalra PS & Kalra SP. Suppression of fat deposition for the life time with gene therapy. *Peptides* (2005) **26**: pp. 1512-1519.
10. Nzang Nguema G, Boghossian S, Dardevet D, Grizard J & Alliot J. Effect of treatment with dexamethasone on protein intake in adult and old Lou/c/jall rats. *Mech Ageing Dev* (2005) **126**: pp. 655-663.
11. Boghossian S, Dube MG, Torto R, Kalra PS & Kalra SP. Hypothalamic clamp on insulin release by leptin-transgene expression. *Peptides* (2006) **27**: pp. 3245-3254.
12. Boghossian S, Lecklin A, Dube MG, Kalra PS & Kalra SP. Increased leptin expression in the dorsal vagal complex suppresses adiposity without affecting energy intake and metabolic hormones. *Obesity (Silver Spring)* (2006) **14**: pp. 1003-1009.
13. Ruscica M, Dozio E, Boghossian S, Bovo G, Martos Riaño V, Motta M & Magni P. Activation of the Y1 receptor by neuropeptide Y regulates the growth of prostate cancer cells. *Endocrinology* (2006) **147**: pp. 1466-1473.
14. Torto R, Boghossian S, Dube MG, Kalra PS & Kalra SP. Central leptin gene therapy blocks ovariectomy-induced adiposity. *Obesity (Silver Spring)* (2006) **14**: pp. 1312-1319.

15. Boghossian S, Ueno N, Dube MG, Kalra P & Kalra S. Leptin gene transfer in the hypothalamus enhances longevity in adult monogenic mutant mice in the absence of circulating leptin. *Neurobiol Aging* (2007) **28**: pp. 1594-1604.
16. Iwaniec UT, Boghossian S, Lapke PD, Turner RT & Kalra SP. Central leptin gene therapy corrects skeletal abnormalities in leptin-deficient ob/ob mice. *Peptides* (2007) **28**: pp. 1012-1019.
17. Boghossian S, Lemmon K, Park M & York DA. High-fat diets induce a rapid loss of the insulin anorectic response in the amygdala. *Am J Physiol Regul Integr Comp Physiol* (2009) **297**: p. R1302-11.
18. Iwaniec UT, Dube MG, Boghossian S, Song H, Helferich WG, Turner RT & Kalra SP. Body mass influences cortical bone mass independent of leptin signaling. *Bone* (2009) **44**: pp. 404-412.
19. Boghossian S, Park M & York DA. Melanocortin activity in the amygdala controls appetite for dietary fat. *Am J Physiol Regul Integr Comp Physiol* (2010) **298**: p. R385-93.
20. Kim Y, Park M, Boghossian S & York DA. Three weeks voluntary running wheel exercise increases endoplasmic reticulum stress in the brain of mice. *Brain Res* (2010) **1317**: pp. 13-23.
21. Iwaniec UT, Boghossian S, Trevisiol CH, Wronski TJ, Turner RT & Kalra SP. Hypothalamic leptin gene therapy prevents weight gain without long-term detrimental effects on bone in growing and skeletally mature female rats. *J Bone Miner Res* (2011) : .
22. York DA, Boghossian S & Park-York M. Melanocortin activity in the amygdala influences alcohol intake. *Pharmacol Biochem Behav* (2011) **98**: pp. 112-119.