Advisory committee meeting for T/A staff
31/5 at 15:15-16 in the dept office kitchen on F10. Welcome!

Advisory committee meeting for researchers & teachers 31/5 at 14-15 in the “prefektrummet” on F10. Welcome!

It’s strawberry time!
Check out page 4!

Introduction in English for new employees
Click here to sign up for a Lund University Introduction Day for new employees! Tues Oct 11th at 8.30 – 15.00 (coffee and lunch included)
Nästa svenskspråkiga introduktionsdag för nyanställda är den 4 oktober

Supervisors wanted!
As of spring 2012, students on the medical programme (T10 or “semester 10”) are to write a 20-week diploma work at advanced level (a master’s thesis). We hope that as many as possible from our department will take the opportunity to be supervisors. Click here for more info.

The Novo Nordisk Fund
Grants for basic and clinical research in endocrinology. (Grants not available for cancer research.) Application deadline: 4 p.m. on May 31st.

Rolf Luft Award
Nominations for the 2010 Rolf Luft award for discoveries within the research fields of Endocrinology and Diabetes are now accepted. Click here for more info.

Post Doc Fellowships
Hjärnfonden, the Swedish Brain Foundation, advertise Post Doc fellowships. The application deadline is June 8th. Applications are made through the Brain Fund’s website.

That PI day was great!
We all worry sometimes that our memory is going. My family used to say that “if you are holding a key and you don’t know where it goes, you are ok. But when you hold a key and you don’t know what it is you are in trouble.”

In his former workplace, in the Weill Cornell Medical Center, Professor Gunnar Gouras was part of the memory disorders specialist team. If I pretend I was to visit Dr Gouras for a consultation, how would he diagnose me?

“At your age my first thought would be that you are suffering from a mood disorder. Depression can cause dementia.”

In fact, dementia can be caused by a plethora [Swe: uppsjö] of imbalances in the body. Gouras mentions kidney disease, diabetes, brain tumors, and altered electrolyte balance in the body and brain. Being diagnosed with depression might be a waste of Dr Gouras’s expertise, so I decide to change my age and claim that I’m 75!

“In that case, it is likely that your relatives brought you to me. Patients themselves often don’t realize they have a memory problem.”

Gunnar Gouras describes how my relatives would shake their heads in the background while I try to reassure him that I’m fit as a fiddle.

“I would get as much info as possible about what has been going on, about your family and medical history. I would also check your lipid profile and medication list if you have one.”

Meanwhile my relatives would probably tell Dr Gouras stories about how I paid a bill several times or got lost on the way to the grocery store. Dr Gouras would have me take a quick cognitive test where I would be asked to spell backwards and complete other similar tasks.

“I’ve also seen patients who know that something is wrong before our tests can detect it. Then I forward them to a neuropsychologist for thorough interviews.”

The leading cause of dementia is Alzheimer’s disease. One difficult problem in Alzheimer’s is that people can get behavioral disturbances, which are difficult to treat.
After the strenuous move overseas, Gunnar Gouras says that less is more: “I threw out so many papers emptying my old lab, I don’t want to start collecting them again.”

Someone who their whole life was peaceful and nice can start screaming, cursing and throwing things.

*How are you supposed to interpret that behavior? I ask.* Was it always a latent part of the personality?

“We all have mixed personalities. Alzheimer’s destroys your brain. The way it does this is different in different people: Areas that dampen aggressive streaks might degenerate earlier in some people.”

“It can be very hard on elderly caregivers, who have health problems of their own,” Gunnar continues. “Sometimes the caregiver can’t sleep at night because their spouse is up walking or trying to go outside. Alzheimer patients are really sensitive; you can’t give them sleeping pills like you can a normal person.”

I didn’t want to be diagnosed with mood disorder in the beginning of our conversation, but Dr Gouras gives me a new perspective: When *every other diagnosis except Alzheimer’s* has been ruled out there isn’t very much anyone can do.

“We can’t cure a single Alzheimer patient. We have medications that help a little, but they don’t prevent you from ‘going down hill’. A patient once told me ‘I’m disappointed in you Dr Gouras, it’s been seven years and you haven’t helped me’. I had to agree with him. It’s terrible.”

“We know that cardio-vascular disease is a risk factor so I recommend physical exercise,” says Gunnar. “There was a ninety year old man with back problems who got to start swimming again in hope that exercise would slow down the progression.”

As a consequence of the frustration Dr Gunnar Gouras has devoted more and more time to research: “We’ve provided evidence that age-related dysfunction in the Alzheimer’s disease initiates with aberrant accumulation of beta-amyloid within vulnerable neurons and synapses.” (Click here for a link to the publication.)

Alzheimer’s involves the process of thinking, one of the most complex things known to man. Synapses are what make human beings special, and the amyloid is made when they fire! Amyloid is actually secreted when we think. The cognitive decline happens as amyloid reaches abnormal concentrations and starts to form plaques. “Amyloid is a very sticky little peptide,” says Gouras. “Very sticky.”

Researchers in the field have tried different approaches to tackle Alzheimer’s over the years. One of Gunnar Gouras’s interest areas is gene therapy: “Even if only 5% of all Alzheimer cases can be attributed to a genetic mutation, isn’t it wise to try to fix that mutation? My goal is to continue working on understanding the disease, but frankly, we might never fully understand Alzheimer’s, and meanwhile, fixing the gene could help people.”

Gunnar mentions four advantages that influenced his decision to relocate here: Lund is strong in Parkinson’s research and experimental gene therapy. “There are lots of parallels between Parkinson’s and Alzheimer’s,” he explains. The third reason he gives is clinics: “Clinics in Sweden are fantastic. I never saw such a beautiful memory disorder clinic as the Neuropsykiatriska kliniken between Lund and Malmö. Finally, I like that diabetes is another strong point.”

Concerning the job, I was very impressed by the facilities and potential offered by BMC, and it was clear to me that I could keep moving forward and improve my research here.”
Welcome to the traditional EMV Strawberry Feast.

Friday June 17th at 14:00 in Belfragesalen we celebrate spring accomplishments and the arrival of summer.

Click here to sign up!
Regulation of AMP-activated protein kinase by LKB1 and CaMKK in adipocytes...

AMP-activated protein kinase (AMPK) is a serine/threonine kinase that regulates cellular energy homeostasis. AMPK is activated by the worldwide-prescribed anti-diabetic drug metformin. The activation of AMPK lowers glycaemia by regulating gluconeogenesis in the liver and induces glucose uptake during exercise or in response to metformin in muscle. Previous studies identified LKB1 as a major AMPK kinase in muscle, liver and other tissues. In certain cell types, Ca2+/Calmodulin-dependent protein kinase kinase (CaMKK) was shown to activate AMPK in response to increase of intracellular Ca2+ levels. In adipose tissue, activation of AMPK was shown in response to a variety of extracellular stimuli, but the upstream kinases that activate AMPK remain elusive. Our aim was to determine if LKB1 and/or CaMKK function as AMPK kinases in adipocytes. In this paper, we show that LKB1 is required to maintain normal AMPK-signalling in non-stimulated adipocytes and in the presence of phenformin (an analog of metformin). We also demonstrate the existence of a Ca2+/CaMKK signalling pathway that can regulate the activity of AMPK in adipocytes. Elucidating the role of the AMPK signalling pathway in adipocytes might be crucial to improve treatments for obesity and diabetes.

... EXPLAINED:

Regulation of AMP-activated protein kinase by LKB1 and CaMKK in adipocytes

A deadly spread: cellular mechanisms of alpha-synuclein transfer

Steiner JA, Angert E, Brundin P.

In vivo analysis of inhibitory synaptic inputs and rebounds in deep cerebellar nuclear neurons

Bengsson F, Ekerot CF, Jörntell H.

Publications with affiliation Department of Experimental Medical Science

Differences in Origin of Reactive Microglia in Bone Marrow Chimeric Mouse and Rat After Transient Global Ischemia


Accumulating mitochondrial DNA mutations drive premature hematopoietic aging phenotypes distinct from physiological stem cell aging

Norddahl GL, Pronk CJ, Wahlestedt M, Sten G, Nygren JM, Ugale A, Sigurdsson M, Bryder D.

An encephalomyelitis-specific locus on chromosome 16 in mouse controls disease development and expression of immune-regulatory genes

Lindvall T, Nandakumar KS, Yousefi K, Holmdahl R, Andersson A.

Nanomedicine’s promising therapy: magnetic drug targeting

Kempe H, Kates SA, Kempe M.

Dopamine release from serotonergic nerve fibers is reduced in L-DOPA-induced dyskinesia

Nevalainen N, Af Bjerkén S, Lundblad M, Gerhardt GA, Strömberg I.

Regulation of AMP-activated protein kinase by LKB1 and CaMKK in adipocytes

Gormand A, Henriksson E, Ström K, Jensen TE, Sakamoto K, Göransson O.
J Cell Biochem. 2011 May;112(5):1364-75. doi: 10.1002/jcb.23053. PMID:21312243

A Method to Study the Epigenetic Chromatin States of Rare Hematopoietic Stem and Progenitor Cells; MiniChIP-Chip

Weishaupt H, Attema JL.
Beautiful patterns emerge when Maria Kempe synthesizes nanoparticles for her research. "When I see something pretty, I take a picture," she says. The images that Maria has had professionally printed, were shown in an exhibition in Västra Hamnen 7-15 of May. "I got the opportunity to tell the general public about nanoscience," she says. "I wanted to demystify nanoparticles, and got a really good response."