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Christian Wolfrum receives Rössler Prize 2014

## Obesity researcher recognised

Zurich, June 12, 2014. **This year's Max Rössler Prize has gone to the nutritional biologist Christian Wolfrum in the Department of Health Sciences and Technology at ETH Zurich. He received the award and its CHF 200,000 prize money for his outstanding research in the field of adipocyte biology and lipid metabolism.**

"If we all ate less and exercised more, my research would probably not be necessary," says Christian Wolfrum. Nevertheless, more and more people in the industrialised world are now considered to be overweight or obese with a body mass index (BMI) of 30 or more. For many of those affected, the consequences are grave: about 70% of all obese people develop type 2 diabetes at some point in their lives, also obesity is now considered a major risk factor for some types of cancer. Meanwhile, scientific data increasingly suggests that many of the obesity associated diseases could be curtailed if we were better able to control our adipose tissue. That's precisely where Christian Wolfrum's studies come in.

Together with about 15 colleagues, the professor of translational nutritional biology is conducting research to determine how adipocytes develop and how the metabolism regulates adipose tissue. He is transferring the results to human applications to gain insights that could help obese people lose weight or avoid related conditions. For his outstanding work at the interface between fundamental biological research and nutritional science, ETH Zurich has now awarded the 42-year-old German the CHF 200,000 Max Rössler Prize.

### Preventing diabetes

In 2011, Wolfrum and his team discovered a highly promising approach to the treatment of type 2 diabetes. When our body gains weight, the white adipose tissue, which serves as an energy reservoir, can grow in two different ways: either the existing adipocytes become larger or the tissue forms new, small adipocytes. Epidemiological studies have shown that obese people with small adipocytes are much less likely to develop diabetes than those with large ones. The scientists identified a natural substance that promotes the growth of small adipocytes and which could help prevent diabetes. Last year, Wolfrum and his partners founded the ETH spin-off Glycemicon for the purpose of testing the substance in clinical studies on humans.

### Breaking conventional wisdom

Wolfrum's group is also conducting research on brown adipose tissue, a type of cell which has the special characteristic of burning large quantities of sugar and fat to produce heat. It has been known for a few years that brown adipocytes are found in adult humans. In 2013, Wolfrum was able to prove for the first time that white and brown adipocytes can be converted into each other and that they

are not necessarily formed from different progenitor cells, as was previously assumed.

Wolfrum caused quite a stir with this finding, which not only questioned conventional wisdom but also opened up a potential avenue for new weight-loss therapies. The fact that his own university has now awarded him the most important research award has still come as a surprise to him: "It's an unbelievable honour for me – especially when I look at my high-profile predecessors. I would never have put myself in the same category, but it definitely feels great," he says.

The donor Max Rössler, who obtained his PhD in mathematics at ETH Zurich, is convinced that his funds are being invested wisely: "Christian Wolfrum is conducting research in a topical and important field. I'm very pleased to support him and be able to give something back to society."

### **Therapeutic use of brown adipocytes**

Wolfrum wants to put the prize money into specific experiments in order to clarify how brown adipose tissue develops at the molecular level. "That will give us an enormous boost and help us extend our lead in this fiercely competitive field," he says. His group is currently working hard to determine which signals convert white adipocytes into brown. Wolfrum's vision is to formulate a therapeutic approach in which brown adipocytes are activated, allowing excess weight to be controlled. "We're looking at 10 to 20 years, but I've got plenty of time," he says.

Wolfrum is an internationally sought-after expert in the field of obesity research and has already received a range of prestigious awards, including the H.P. Kaufmann Award 2000 for Young Scientists from the German Society for Fat Science and the Young Investigator Award 2004 from the European Federation for the Science and Technology of Lipids. In 2008, he was awarded one of the coveted ERC Starting Grants of the European Research Commission. He also won ETH Zurich's Spark Award in 2012 and the main prize in the start-up competition Venture Kick in 2013.

### **Further Information**

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