

# **The 2009 Rolf Luft Award Lecture**

**Tuesday October 6, at 16.30-17.30 At Rolf Luft Auditorium,  
Karolinska University Hospital Solna, L1:00**



**Title: “PI 3-Kinase and glucose metabolism”  
Professor Lewis C. Cantley  
Division of Signal Transduction  
Beth Israel Deaconess Medical Center  
Harvard Medical School  
Boston, U S A**

*Hosts: Prof. Kerstin Brismar and Prof. Per-Olof Berggren*

## M o t i v a t i o n

**The 2009 Rolf Luft Award to Professor Lewis Cantley, Harvard Medical School, for his discovery of a phosphoinositide kinase that is activated by growth factor receptors and oncoproteins and is a key component of the insulin signal transduction pathway.**

Dr Lewis Cantley has discovered a phosphoinositide kinase, PI 3-kinase, that is activated by growth factor receptors and by oncoproteins. Further characterization of this enzyme revealed that it catalyzes an unexpected reaction, namely the phosphorylation of phosphatidylinositol at the D-3 position of the inositol ring, leading to the discovery of a new signal transduction pathway. Subsequent research from Cantley's laboratory and other laboratories has shown that PI 3-kinase activation is critical for oncogene-mediated cell transformation, as well as for insulin-dependent stimulation of glucose uptake and metabolism. Further work revealed that lipid products of PI 3-kinase directly activate the AKT/PKB protein kinase another key element of the insulin signaling pathway. The discovery that the PTEN tumor suppressor gene encoded a phosphatase that dephosphorylates the lipid products of PI 3-kinase further highlights the importance of this pathway to growth and human cancer.