

mTOR Signaling in Growth and Metabolism

ABOUT THE LECTURE

TOR (target of rapamycin) is a highly conserved serine/threonine kinase that controls cell growth and metabolism in response to nutrients, growth factors, cellular energy, and stress. TOR was originally discovered in yeast but is conserved in all eukaryotes including plants, worms, flies, and mammals. The discovery of TOR led to a fundamental change in how one thinks of cell growth. It is not a spontaneous process that just happens when building blocks (nutrients) are available, but rather a highly regulated, plastic process controlled by TOR-dependent signaling pathways. TOR is found in two structurally and functionally distinct multiprotein complexes, TORC1 and TORC2. The two TOR complexes, like TOR itself, are highly conserved. Thus, the two TOR complexes constitute an ancestral signaling network conserved throughout eukaryotic evolution to control the fundamental process of cell growth. As a central controller of cell growth, TOR plays a key role in development and aging, and is implicated in disorders such as cancer, cardiovascular disease, obesity, and diabetes.

SPEAKER : Professor Michael Hall

Professor of Biochemistry Biozentrum,
University of Basel, Switzerland

HOST : Professor Karl Tryggvason

Cardiovascular & Metabolic Disorders Programme
Duke-NUS Graduate Medical School Singapore

DATE / TIME : Thursday, 28 January 2016 — 3:00 to 4:00 PM
(with Light Refreshment at 2:30 PM)

VENUE : Amphitheatre, Level 2

Duke-NUS Graduate Medical School Singapore

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ABOUT THE SPEAKER

Michael N. Hall was born (1953) in Puerto Rico and grew up in South America (Venezuela and Peru). He received his Ph.D. from Harvard University and was a post-doctoral fellow at the Pasteur Institute (Paris, France) and the University of California, San Francisco. He joined the Biozentrum of the University of Basel (Switzerland) in 1987 where he is currently Professor and former Chair of Biochemistry. Hall is a pioneer in the fields of TOR signaling and cell growth control. In 1991, Hall and colleagues discovered TOR (Target of Rapamycin) and subsequently elucidated its role as a central controller of cell growth and metabolism. Hall is a member of the US National Academy of Sciences, has received numerous awards, including the Louis-Jeantet Prize (2009), the Marcel Benoist Prize (2012), the Breakthrough Prize (2014), and the Canada Gairdner International Award (2015), and has served on several editorial and scientific advisory boards.

