Friday, July 10, 2009

11:00 am

Dr. Malcolm Leissring
Department of Neuroscience, Mayo Clinic Florida

“Proteolytic degradation of the amyloid beta-protein: the forgotten side of Alzheimer’s disease”

Hosts: P.C. Fraering & H. Lashuel

Conference room: AI1153 – EPFL Lausanne

Abstract: The amyloid β-protein (Aβ), which accumulates abnormally in Alzheimer disease (AD), is degraded by a diverse set of proteolytic enzymes. Aβ-cleaving proteases, largely ignored until only recently, are now known to play a pivotal role in the regulation of cerebral Aβ levels and amyloid plaque formation in animal models, and accumulating evidence suggests that defective Aβ proteolysis may be operative in many AD cases. Recognition of the importance of Aβ degradation to the overall economy of Aβ has revised our thinking about the mechanistic basis of AD pathogenesis and identified a novel class of enzymes that may serve as both therapeutic targets and therapeutic agents. Proc Nat Acad Sci USA 2008, 105(28): 9583-7; J Biol Chem 2008, 283(44): 29645-9; Mol Neurodegen 2009 Jan 14;4(1):4; PLoS ONE 2009 4(4):e5274.

Biography: After earning his Ph.D. from UC Irvine LaFerla lab), Dr. Leissring conducted his post-doctoral research in the laboratory of Dr. Dennis Selkoe at Harvard Medical School, a world-renowned Alzheimer’s disease researcher. In Dr. Selkoe’s laboratory, Dr. Leissring demonstrated that Alzheimer's disease could be completely prevented in mice by activating of a special class of enzymes that can break down the beta-amyloid peptide, the primary constituent of the plaques that litter the brains of Alzheimer’s patients. This novel finding has unveiled a host of novel drug targets that his lab is currently pursuing.

Following a brief tenure at The Scripps Research Institute, Scripps Florida, Dr. Leissring moved to the Mayo Clinic College of Medicine in Jacksonville, one of world’s leading institutes investigating Alzheimer’s disease and related disorders. This move has given Dr. Leissring’s lab invaluable access to human tissue samples, genetic data, and animal models that will accelerate his goal of developing novel therapies.