

# Seminar Series

5<sup>th</sup> June 2013

## G protein Coupled Receptors Signalling and Vascular Wall Remodelling

*Speaker*

**Dr. Ravisekhar Gadepalli**

Post Doctoral Fellow

University of Tennessee Health Science Center,  
Memphis, TN, 38163 USA.

### **Abstract**

Thrombin, a G protein–coupled receptor agonist, activated Pyk2 in a time-dependent manner and inhibition of its stimulation attenuated thrombin-induced human aortic smooth muscle cell migration and proliferation. Thrombin also activated Grb2-associated binder protein 1, p115 Rho guanine nucleotide exchange factor, Rac1, RhoA, and p21-activated kinase 1 (Pak1) and interference with stimulation of these molecules attenuated thrombin-induced human aortic smooth muscle cell migration and proliferation. In addition, adenovirus-mediated expression of dominant negative Pyk2 inhibited thrombin-induced Grb2-associated binder protein 1, p115 Rho guanine nucleotide exchange factor, Rac1, RhoA and Pak1 stimulation. Balloon injury also caused activation of Pyk2, Grb2-associated binder protein 1, p115 Rho guanine nucleotide exchange factor, Rac1, RhoA, and Pak1 in the carotid artery of rat, and these responses were sensitive to inhibition by the dominant negative Pyk2. Furthermore, inhibition of Pyk2 activation resulted in reduced recruitment of smooth muscle cells onto the luminal surface and their proliferation in the intimal region leading to suppression of neointima formation.

**Venue: Auditorium, C.R.Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS), University of Hyderabad**

**Time: 11.30 AM to 12.30 PM**