Specialized iNANO lecture
- open to all

PhD, Dr., Associate Professor, Vadim V. Sumbayev
Medway School of Pharmacy,
University of Kent,
Chatham, UK

Title: Intracellular signalling pathways associated with pathogen-induced and allergic inflammatory reactions

Time: Wednesday 9 March, 2011, at 2:15pm
Location: Physics Department, building 1520, room 333

Abstract:
Human inflammatory/innate immune reactions are triggered by pattern-recognition Toll-like receptors (TLRs) which lie at the core of resistance to infectious disease allowing the host immune system to distinguish between “self” and “non-self”. Upon recognition of a pathogen-associated molecular pattern, TLRs induce intracellular inflammatory stress. Following adaptation to such a stress, the effector cells express, activate and release pro-inflammatory cytokines which trigger further stages of host immune defence known as adaptive immunity. Also TLRs are able to recognise host-derived endogenous ligands thus allowing such processes like tissue regeneration but also could lead to pathological autoimmune reactions. We study the molecular mechanisms of adaptation of the innate immune cells to inflammatory stress and also associated signalling pathways, induced by pathogenic and endogenous TLR ligands. In addition, we found a number of similarities between stress-adaptation mechanisms employed by the cells responsible for host innate immune defence and pathological allergic reactions.

Please see selected references for further details: