



MHC class II association with lipid rafts modulates T cell activation

Date: Wednesday, October 12, 2005, 15.00–16.00

Venue: Rikshospitalet University Hospital,
IMMI's lunch room, A2.2068



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The plasma membrane of eukaryotic cells does not consist of a uniformly dispersed collection of lipids and protein but is instead partitioned into distinct microdomains that are enriched in particular lipids and proteins. Perhaps the best characterized membrane microdomain is the so-called lipid raft. One proposed function for cell surface lipid rafts is to concentrate proteins by “trapping” them in the liquid-ordered microenvironment of the lipid raft, thereby restricting their lateral mobility and effectively concentrating them in the membrane microdomain. While T cell lipid rafts have been widely reported to influence T cell activation, a role for APC rafts is less well appreciated. By isolating APC lipid rafts and examining their content we found that approximately half of the surface pool of class II molecules are present in raft-like microdomains and demonstrated that perturbing APC raft integrity profoundly inhibits the ability of APCs to stimulate antigen-specific T cells. We have also found that class II molecules first associate with lipid rafts prior to peptide loading in intracellular antigen processing compartments. We are now investigating the mechanisms by which MHC class II molecules associate with rafts and are also interested in identifying the molecular machinery required for the sorting of class II molecules into and out of multivesicular antigen processing compartments.

Refreshments will be served after the meeting. Open to all. Welcome!