“Capture Of Influenza By Medullary Dendritic Cells Via SIGN-R1 Is Essential For Humoral Immunity In Draining Lymph Nodes”

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Abstract
A major pathway for B cell acquisition of lymph-borne particulate antigens relies on antigen capture by subcapsular sinus macrophages of the lymph node. This presentation discusses testing whether this mechanism is also important for humoral immunity to inactivated influenza virus. By multiple approaches, mainly multiphoton intravital imaging, we found that antigen capture by sinus-lining macrophages was important for limiting the systemic spread of virus but not for the generation of influenza-specific humoral immunity. Instead, we found that dendritic cells residing in the lymph node medulla use the lectin receptor SIGN-R1 to capture lymph-borne influenza virus and promote humoral immunity. Thus, our results have important implications for the generation of durable humoral immunity to viral pathogens.