

## Short CV: Jacques Neefjes

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Neefjes is studying the molecular and cell biology of antigen processing and presentation by MHC class I and MHC class II molecules. Neefjes' team has solved many steps in our current understanding of the MHC class I and MHC class II cell biology. This work is broadly applied in modern immunotherapy approaches. He is now combining that with genetic and chemical screens to find new targets and new leads for manipulation. Neefjes' work also formed the basis of a line of translational research where chemistry (drug screens) are tested on fresh tissue materials to predict new drugs active on individual patients. This has yielded new drug indications and new radiosensitizers.

Neefjes has developed a number of unique lines of research with implications for cancer. These include the molecular basis for radio-immunotherapy and drug development for chemo-immunotherapy in cancer. Other lines of research include the relationship between bacterial infections and cancer. Neefjes showed the link between *Salmonella Typhi* infections and gallbladder carcinoma and most recently the link between another *Salmonella* serovar, *Salmonella Enteritidis* and colon cancer risk.

MHC class II and CD1 molecules use the endosomal pathway to acquire antigens for presentation. This has inspired Neefjes to study the mechanisms of endosomal fusion and transport and the question how that affects MHC class II antigen presentation in normal cells and DCs under control and stimulated conditions. Such approaches may yield new clues for further manipulation of this complex process and MHC class II and CD1 antigen presentation.