Project: Impact of HCMV infection on development and function of natural killer cells: establishment of an *in vitro* model

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Natural Killer cells are a key component of the early immune response and play an important role for the control of viral infections. The specificity of NK cells depends on the expression of inhibitory and stimulatory NK cell receptors (NKR) especially of the KIR and NKG2A family. These receptors are clonally expressed, i.e. each NK cell expresses a specific „clonal" combination of different NKR. It is currently unclear, which molecular factors control the clonal expression mode of NKR. Recent studies point towards a role for viral infections with herpes viruses such as CMV in this process. The focus of this project is to establish a novel *in vitro* model to study the role of HCMV on NK cell differentiation. It will be analyzed, how viral infection affects NK cell differentiation, expression of NKR, and NK cell function. By employing HCMV mutant strains lacking selected immune evasins, we will try to identify viral components that regulate or interfere with these NK cell functions. The interaction of CMV-infected cells and NK cells is of considerable clinical relevance since CMV infection or reactivation poses a substantial threat for immunosuppressive patients receiving organ or stem cell transplantation.