

**Participant 12:** HHU - Dr. Markus Uhrberg, PhD, Institute for Transplantation Diagnostics and Cell Therapeutics, University Clinic of Düsseldorf, Germany

Dr. Uhrberg leads the Young Investigator Group "Natural Immunity", which was installed in 1999 at the Department of Transplantation Diagnostics and Cell Therapeutics in Düsseldorf (Director: Prof. Dr. P Wernet). Dr. Uhrberg has a long-standing interest in the function, immunogenetics and polymorphisms of NK cell receptors and was, during his postdoctoral work in the laboratory of Dr. P. Parham in Stanford, USA, the first to define the unusual diversity of the *KIR* gene family (Uhrberg et al., 1997). Current research is focused on the regulation of NK receptor expression (Santourlidis et al., 2002) and the clinical relevance of *KIR* gene polymorphism for stem cell transplantation. He regularly organizes and runs workshops for graduate students and clinicians on NK cell receptor expression analysis in cooperation with *Beckman Coulter<sup>TM</sup>* as well as in the framework of the Interdisciplinary Group of Laboratory and Flow Cytometry (IGLD) and the European School of Hematology (ESH).

Dr. Uhrberg hosts a highly competitive and fully equipped research team, which provides the core for a still growing research unit dedicated to clinically relevant questions of NK cell function. The scientific research team consists of two senior research scientists, two early-stage and two advanced-stage PhD students and one technician and is supported by several research grants of the state of North Rhine Westfalia, the German Cancer Aid and the European Community (FPV, EUROBANK). Dr. Uhrberg's laboratory has a close collaboration with Professor Wernet, the director of the Institute for Transplantation Diagnostics and Cell Therapeutics. Large equipment like 96-capillary DNA sequencer, microarray facility, cell sorting facility, and real time PCR machine are shared between groups. Dr. Wernet operates Europe's largest cord blood bank and has an ASHI and EFI-accredited immunogenetics facility for high throughput HLA class I, II and minor antigen typing. Dr. Uhrberg also has a close collaboration with his former mentor Professor P. Parham, Stanford University. Protocols, reagents and samples are continuously exchanged between laboratories. Several joint projects on the nature of *KIR* polymorphism were already completed or are underway.

**Network Team:**

**Dr. Ingo Trompeter** - has worked for 10 years at the Department of Clinical Biochemistry (Prof. Söling) in Göttingen before starting in Düsseldorf as a senior researcher in 1999. He is an experienced supervisor of PhD students and undergraduates. He developed the NK cell nucleofection technology and is experienced in all aspects of gene regulation analysis. - **Dr. Simeon Santourlidis** - Senior Research Associate - has worked during his PhD thesis on regulation of tumour suppressor genes through DNA methyltransferases. He recently discovered the influence of DNA methylation on *KIR* gene expression and has developed novel techniques to analyze *KIR* gene polymorphisms. Both network members are also tutors of student courses in basic immunology and immunogenetics. Dr. Uhrberg employs **two PhD fellows** on 1): The assessment and relevance of *KIR* polymorphism in stem cell transplantation (PhD student) and 2): Reconstitution of NK cell repertoires and correlation with anti-leukaemic responses (PhD student).

**Relevant References:**

- 1 Santourlidis S, Trompeter H-I, Weinhold S, Eisermann B, Meyer KL, Wernet P, Uhrberg M. Crucial role of DNA methylation in determination of clonally distributed KIR expression patterns in natural killer cells. **J Immunol** (2002) 169:4253-4261.
- 2 Uhrberg M, Valiante NM, Shum BP, Shilling HG, Lienert-Weidenbach K, Corliss B, Tyan D, Lanier LL, and Parham P (1997). Human diversity in killer cell inhibitory receptor genes. **Immunity** (1997) 7(6):753-763.