NK2021 BERLIN

NATURAL KILLER CELL SYMPOSIUM
BERLIN, GERMANY
JUNE 14TH-16TH 2021

DGfI German Society for Immunology

Monday 14th June 2021			
TIME	Venue: Zoom		
12.45-13.45 **Separate registration needed**	**Young Academy "Meet and Greet"** 12:45- 13:00: Introduction of the YI representatives, Introduction work of Young Immunologists 13:00- 13:40: Maren Büttner: **Computational challenges in single-cell profiling**		
13.45-14.15 (Breakout Room 1)	**Assembly of the DGfI Working Group "NK Cells"**		
14.15-14.25 (Main Session)	**Opening of the NK2021 (Chiara Romagnani and Andreas Diefenbach)**		
14.25-15.00 (Main Session)	**Session I: NK Cell Receptors and Development** **Chair: Roland Jacobs**		
14.25-14.50	**Karl-Johan Malmberg: Adaptive reprogramming of iPSC-derived NK cells**		
14.50-15.00	Pia Fittje: Impact of HIV-1-mediated downregulation of CD155 on recognition by KIR2DL5+ NK cells		
15.00-16.00 (Main Session)	**Session II: Adaptive NK Cells** **Chair: Marcus Altfeld**		
15.00-15.25	**Joseph Sun: Deconvoluting global cytokine signaling networks in NK cells**		
15.25-15.35	Timo Rückert: Cytomegalovirus induces stable oligoclonal expansions of epigenetically remodeled adaptive NK cells		
15.35-15.45	Sophie Flommersfeld: Adaptive-like NK cell responses are composed of conventional and ILC1-like lineages		
15.50-16.00	Break		
16.00-17.00	**Short Talk (Breakout Rooms 1, 2)**		
	Short Talks I: ILCs and NK cells in Tissue Chair: Veit Buchholz (Breakout Room 1, p101-107)	Short Talks II: NK Cell Functions I Chair: Ana Stojanovic (Breakout Room 2, p108-114)	
17.00-18.00 (Main Session)	**Session III: Circulating and Tissue ILC1 and NK Cells** **Chair: Georg Gasteiger**		
17.00-17.25	**Marco Colonna: Multi-tissue Single-Cell Analysis Deconstructs the Complexities of Mouse NK-ILC1 Programs in Tissues and Circulation**		
17.25-17.35	Christin Friedrich: Effector differentiation downstream of lineage commitment in ILC1 is driven by Hobit		
17.35-17.45	Ryland Mortlock: Tissue Trafficking Kinetics of Rhesus Macaque Natural Killer Cells Measured by Serial Intravascular Staining		
17.45-18.00	Break		
18.00-18.45	**Meet the Speaker (Breakout Rooms 1, 2, 3)**		
	Session I: Kalle Malmberg Pre-registered participants Breakout Room 1	Session II: Joe Sun Pre-registered participants Breakout Room 2	Session III: Marco Colonna Pre-registered participants Breakout Room 3
Tuesday, 15th June 2021			
TIME	Venue: Zoom		
12.45-14.15 (Breakout Room 1)	**Industry Symposium** 12.45-13.00 Graeme Milton (StemCell Technologies): Tools for NK cell research		

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	13.00-13.30 Cam Loan Tran (Biolegend): Proteogenomics and TotalSeq™ Reagents: A New Era of Single-Cell Analysis 13.30-14.00 Sebastian Lunemann (Cytek Biosciences): Full Spectrum NK Cells; Sarah Metzler: Detection of memory like ILC1s during repeated liver damage by multi parametric flow cytometry; Tommaso Torcellan: Modulation of tissue-niches of resident NK cells and ILC1s in response to infection				
14.15-15.00 (Main Session)	**Session IV: NK Cell Functions Chair: Carsten Watzl**				
14.15-14.40	**Thierry Walzer: Proteomic changes in NK cells during tumor-induced functional exhaustion**				
14.40-14.50	Tiphaine Camarasa: NK cell memory to Streptococcus pneumoniae infection				
14.50-15.00	Christopher Groth: Dissecting NK cell reactivity against hepatitis B/D virus infection				
15.00-16.00 (Main Session)	**Session V: NK Cell Subsets and Differentiation Chair: Chiara Romagnani**				
15.00-15.25	**Cynthia Dunbar: Insights into NK cell life histories and response to CMV infection in the macaque model**				
15.25-15.35	Dang Nghiem Vo: Defining human NK cell developmental pathway through in vitro NK cell-differentiation map and cellular barcode-tracing				
15.35-15.45	Sigrid Wahlen: The transcription factor RUNX2 promotes development of human tissue-resident NK cells				
15.45-16.00	Break				
16.00-17.00	**Short Talk (Breakout Rooms 1, 2)**				
	Short Talks III: NK Cells and Cancer I Chair: Jan P. Böttcher (Breakout Room 1, p115-121)	Short Talks IV: NK Cell Functions II Chair: Madeleine Bunders (Breakout Room 2, p122-128)			
17.00-18.00 (Main Session)	**Session VI: NK Cells and ILCs in Homeostasis, Infection and Inflammation Chair: Andreas Diefenbach**				
17.00-17.25	**Jenny Mjösberg: Innate lymphoid cell (ILC)-differentiation and effector functions relative to T cells in inflammatory bowel disease**				
17.25-17.50	**Donna Farber: Tissue compartmentalization of NK cells and anti-viral immunity**				
17.50-18.00	Ee von Woon: The unique properties of endometrial NK cells in preparation for pregnancy				
18.00-18.45	**Meet the Speaker (Breakout Rooms 1, 2, 3, 4, 5)**				
	Session IV: Thierry Walzer Pre-registered participants (Breakout Room 1)	Session V: Cynthia Dunbar Pre-registered participants (Breakout Room 2)	Session VI: Jenny Mjösberg Pre-registered participants (Breakout Room 3)	Session VII: Donna Farber Pre-registered participants (Breakout Room 4)	Session VIII: Todd Fehniger Pre-registered participants (Breakout Room 5)
Wednesday 16th June 2021					
TIME	Venue: Zoom				
11.45-13.00 (Breakout Room 1)	**Industry Symposium:** 11.45-12.15 Jan Spanholtz (Glycostem Therapeutics): "From bench to bedside and towards product registration - Cord blood stem cell derived NK cells and genetically modified NK cell products for treatment of hematological and solid cancers"				

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	12.15-12.30 Julia Hengst (Miltenyi Biotec): Tools for translational NK cell research 12.30-13.00 Amir Horowitz (Fluidigm sponsored): HLA-E and NKG2A define a novel immune checkpoint axis in bladder cancer		
13.00-13.45	**Meet the Speaker (Breakout Room 1, 2, 3)**		
	Session IX: Bojan Polic Pre-registered participants (Breakout Room 1)	Session X: Ashley Moffett Pre-registered participants (Breakout Room 2)	Session XI: Eric Vivier Pre-registered participants (Breakout Room 3)
13.45-14.00	Break		
14.00-15.00 (Main Session)	**Session VII: NK Cells and Metabolism Chair: Markus Uhrberg**		
14.00-14.25	**Bojan Polic: The role of NKG2D in development of non-alcoholic steatohepatitis and liver fibrosis**		
14.25-14.35	Lea Boller: Effect of glucose-transporter inhibitors on the function of Natural Killer cells		
14.35-14.45	Elisabeth Littwitz-Salomon: Metabolic requirements of NK cells during the response against retroviral infection		
14.45-14.50	Break		
14.50-15.15 (Main Session)	**Session VIII: Uterine NK Cells Chair: Carmen Infante-Duarte**		
14.50-15.15	**Ashley Moffett: NK cells and Human Reproduction**		
15.15-15.45 (Main Session)	**Session IX: NK Cells in SARS-CoV-2 Chair: Lutz Walter**		
15.15-15.25	Mario Witkowski: Untimely TGF-β responses in severe COVID-19 inhibit NK cell function and NK cell-mediated control of SARS-CoV-2 replication		
15.25-15.35	Benjamin Krämer: Persistent natural killer cell dysfunction in severe COVID-19		
15.35-15.45	Quirin Hammer: SARS-CoV-2-derived peptides regulate NK cell responses through HLA-E		
15.45-16.00	Break		
16.00-17.00	**Short Talk (Breakout Rooms 1, 2)**		
	Short Talks V: NK Cells and Cancer II Chair: Gabriela Wiedemann (Breakout Room 1, p129-135)	Short Talks VI: NK and ILC Development and Regulation Chair: Marina Babić (Breakout Room 2, p136-143)	
17.00-18.00 (Main Session)	**Session X: NK Cells and Cancer Immunotherapy Chair: Evelyn Ulrich**		
17.00-17.25	**Eric Vivier: Harnessing innate immunity in cancer therapies: the example of Natural Killer Cell Engagers**		
17.25-17.35	Anna-Marie Pedde: A dysfunctional program imprinted by PGE2 signaling shuts off NK cell communication pathways and disables immunosurveillance of metastasis		
17.35-18.00	**Todd Fehniger: Translating NK cell memory as cancer immunotherapy**		
18.00-19.00 (Main Session)	**Round Table: NK Cells and Cellular Therapy Moderator: Heidi Cerwenka Participants: Todd Fehniger, Ulrike Köhl, Kalle Malmberg, Eric Vivier**		
19.00	**Closing Remarks and best selected talk award: Marina Babic, Chiara Romagnani, Andreas Diefenbach, Georg Gasteiger**		

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Short Talks	
Session I: ILCs and NK Cells in Tissues	
Monday, June 14th, 2021 16.00-17.00 Breakout Room 1 Chair: Veit Buchholz	101. Chuanfeng Wu: Tissue-Resident Clonal Expansions of Rhesus Macaque NK Cells 102. Tommaso Torcellan: Modulation of tissue-niches of resident NK cells and ILC1s in response to infection 103. Antonia O. Cuff: The role of IL-22 and IL-22 producing immune cells in the uterus 104. Kim M. Kaiser: Increased frequency of IL-17A producing ILC3 in duodenal mucosa in familial adenomatous polyposis 105. Sarah Metzler: Memory like ILC1s during repeated liver damage 106. Silvina Romero-Suárez: The Aryl-hydrocarbon Receptor-dependent Regulation of Innate Lymphoid Cell Responses in Skin Inflammation 107. Jia-Xiang See: Innate Lymphocytes Regulate Immune Functions of Liver Sinusoidal Endothelial Cells
Session II: NK Cell Functions I	
Monday, June 14th, 2021 16.00-17.00 Breakout Room 2 Chair: Ana Stojanovic	108. Jenny F. Kühne: Donor lymphocytes in peripheral blood of patients after lung transplantation comprise high frequencies of KIR-positive T and NK cell subsets 109. Greta Meyer: Influence of HCMV variants expressing NKG2D ligands on immune cell activation 110. Annika Niehrs: Liver organoids as a model system to study immune cell recognition of HBV-infected hepatocytes 111. Kerri Hagemann: Natural Killer cell-mediated ADCC in SARS-CoV-2-infected individuals and vaccine recipients 112. Leonore Mensching: Priming of NK cell effector function by macrophages in HIV-1 infection 113. Maria Carolina Accioly Brelaz-de-Castro: Expression of NKG2D by NK and NKT cells by cutaneous leishmaniasos patients before and after treatment 114. Lea Boller: Engagement of CD56 can stimulate Natural Killer cell responses
Session III: NK Cells and Cancer I	
Tuesday, June 15th, 2021 16.00-17.00 Breakout Room 1 Chair: Jan P. Böttcher	115. Nina Lamers-Kok: Enhancing functionality of NK cells towards colorectal cancer cell lines 116. Upasana Sunil Arvindam: Oxygen concentration significantly alters NK cell phenotype and function: implications for immunotherapy within the solid tumor microenvironment 117. Monica Raimo: Identification of specific gene expression regulation during activation and cancer cell killing of oNKord® Natural Killer cells by transcriptome analysis and comparison with cytotoxic potential 118. Irene Mattiola: The macrophage tetraspan MS4A4A enhances Dectin-1-dependent NK cell-mediated resistance to metastasis 119. Philippa Meiser: The role of cDC1/NK cell communication within the tumor microenvironment for anti-cancer immunity 120. Eimear Mylod: Exploring the role of fractalkine (CX3CL1) in natural killer cell cell chemotaxis and phenotype in obesity associated cancers

	121. Brwa Hussein: Impact of NKC locus gene polymorphisms on natural killer cell function and outcome of immunotherapy in acute myeloid leukemia
Session IV: ILCs and NK Cells Functions II	
Tuesday, June 15th, 2021 16.00-17.00 Breakout Room 2 Chair: Madeleine Bunders	122. Andrew Hogan: Investigating the metabolic requirements of cytokine induced natural killer cell training & the impact of obesity 123. Oscar Fabian Garcia Aponte: Metabolic Differences on NK-92 cells expressing distinctive cytotoxic profiles from varying culturing process parameters 124. Vivian Bönnemann: The Role of Granzymes in NK Cell Cytotoxicity 125. Marta Freitas Monteiro: Characterization of a panel of immortalized Natural Killer cell lines expressing allelic variants for FCGR3A 126. Simone Mantesso: Improving NK cell effector functions and manufacturing by EOMES and T-bet overexpression 127. Gaitan Fabrice Njiomegnie: Adipokines\' function in obesity-induced NK cell dysregulation 128. Christian Körner: TRAIL Engagement Induces Granule Exocytosis and Facilitates Degranulation of NK Cells Recognizing HIV-infected Target Cells
Session V: NK Cells and Cancer II	
Wednesday, June 16th, 2021 16.00-17.00 Breakout Room 1 Chair: Gabriela Wiedemann	129. Katarina Mirjačić Martinović: Increased circulating TGF-β1 is associated with impairment in NK cell effector functions in metastatic melanoma patients 130. Jiri Eitler: PARP inhibitors Olaparib and AG-14361 render otherwise resistant breast and ovarian cancers sensitive towards NK cell mediated killing 131. Klara Klein: Oncogenic potential of mutant STAT5B in natural killer cells 132. Amanda van Vliet: Ex vivo expanded NK cells show potent anti-tumour activity against melanoma 133. Tobias Bexte: Non-viral Sleeping Beauty transposon engineered CD19-CAR-NK cells show a safe genomic integration profile and high antileukemic efficiency 134. Valentin Picant: Emergence of polyfunctional ST2+ NK cells with antitumor properties following IL-33 activation 135. Caroline Hennig: Complement 5a Receptor 2 (C5aR2) expression regulates NKp46 levels and influences formation of pulmonary metastases
Session VI: NK and ILC Development and Regulation	
Wednesday, June 16th, 2021 16.00-17.00 Breakout Room 2 Chair: Marina Babic	136. Daniela C. Hernandez: A comprehensive platform for the faithful generation of human innate lymphoid cell lineages from CD34+ hematopoietic progenitors 137. Diana Schnoegl: Regulation of Fra-2 is essential for correct Natural Killer Cell development and function 138. Sabrina Bianca Bennstein: Deep characterisation of neonatal innate lymphoid subsets reveals a unique precursor able to generate NKG2A-KIR+ NK cells 139. Laura Kiekens: T-BET and EOMES accelerate and enhance functional differentiation of human NK cells by programming HPCs 140. Jan Raabe: KLRG1+ILCp as a Putative Progenitor of IL-13-Producing ILC3 in the Human Liver 141. Minoru Kanaya: Toggling of NKG2A expression drives adaptive reprogramming and functional specialization of iPSC-derived CD19 CAR NK cells 142. Marek Jedlicka: Ex vivo Expanded NK Cells and Their Immunometabolism 143. Ameera Gaafar: Forecast the outcome of hematopoietic stem cell transplantation via the evaluation of NK cells functions and their differential expression of natural killer cells receptors in the donors

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