be used as a monotherapy or in combination with tumor-targeting monoclonal antibodies to trigger induction of anti-cancer immunity. DSP107 is currently tested in IND-enabling studies and clinical development is planned to commence in 2020.

Disclosure Information E. Cendrowicz: None. L.J. Jacob: A. Employment (full or part-time); Significant; KAHN Medical. S. Greenwald: A. Employment (full or part-time); Significant; KAHN Medical. G. Huls: None. M. Dranitzki-Elhalel: None. Y. Pereg: A. Employment (full or part-time); Significant; KAHN Medical. A. Chajut: A. Employment (full or part-time); Significant; KAHN Medical. E. Bremer: None.

P01.10 IFN γ SECRETION OF ADAPTIVE AND INNATE IMMUNE CELLS AS A PARAMETER TO DISPLAY LEUKAEMIA DERIVED DENDRITIC CELL (DC_{Leu}) MEDIATED IMMUNE RESPONSES IN AML

¹LK Klauer*, ¹O Schutti, ¹S Ugur, ¹F Dorane-Gard, ¹N Rogers, ¹M Weinmann, ²D Krämer, ³A Rank, ³C Schmid, ⁴B Eiz-Vesper, ¹HM Schmetzer. ¹University Hospital Munich, Munich, Germany; ²University Hospital Oldenburg, Oldenburg, Germany; ³University Hospital Augsburg, Augsburg, Germany; ⁴Hannover Medical School, Hannover, Germany

10.1136/jitc-2020-ITOC7.23

Background Myeloid leukaemic blasts can be converted into leukaemia derived dendritic cells (DC_{Leu}) with blastmodulatory Kit-I and Kit-M, which have the competence to regularly activate T and immunoreactive cells to gain anti-leukaemic activity or rather cytotoxicity. As innate and adaptive immune responses are notably promoted by the cytokine interferon gamma (IFN γ), we hypothesised that the IFN γ secretion could be a suitable parameter to display DC/DC_{Leu} mediated immunologic activity and even anti-leukaemic cytotoxicity.

Materials and Methods DC/DC_{Leu} were generated from leukaemic WB with Kit-I (GM-CSF + OK-432) and Kit-M (GM-CSF + PGE₁) and used to stimulate T cell enriched immunoreactive cells. Initiated anti-leukaemic cytotoxicity was investigated with a cytotoxicity fluorolysis assay (CTX). Initiated IFN γ secretion of innate and adaptive immune cells (T cells, T^{CD4+} cells, T^{CD8+} cells, NK^{CD56+} cells, NK^{CD161+} cells, CIK^{CD56+} cells, CIK^{CD161+} cells and iNKT) was investigated with a cytokine secretion assay (CSA). In some cases IFN γ production was additionally evaluated with an intracellular cytokine assay (ICA). Conclusively, the IFN γ secretion of immunoreactive cells was correlated with the anti-leukaemic cytotoxicity.

Results Significant amounts of DC and DC_{Leu} as well as migratory DC and DC_{Leu} could be generated with Kit-I and Kit-M without induction of blast proliferation. T cell enriched immunoreactive cells stimulated with DC/DC_{Leu} showed an increased anti-leukaemic cytotoxicity and an increased IFN γ secretion of T, NK and CIK cells compared to control. Both the CSA and ICA yielded comparable amounts of IFN γ positive innate and adaptive immune cells. The correlation between the IFN γ secretion of immunoreactive cells and the anti-leukaemic cytotoxicity showed a positive relationship in T cells, T^{CD4+} cells, T^{CD8+} cells and NK^{CD56+} cells.

Conclusions We found blastmodulatory Kit-I and Kit-M competent to generate DC/DC_{Leu} from leukaemic WB. Stimulation of T cell enriched immunoreactive cells with DC/DC_{Leu} regularly resulted in an increased anti-leukaemic cytotoxicity and an increased IFN γ dependent immunological activity of T, NK and CIK cells compared to control. Moreover the anti-

leukaemic cytotoxicity positively correlated with the IFN γ secretion in T cells, T^{CD4+} cells, T^{CD8+} cells, NK^{CD56+} cells. We therefore consider the IFN γ secretion of innate and adaptive immune cells to be a suitable parameter to assess the efficacy of in vitro and potentially in vivo AML immunotherapy. The CSA in this regard proved to be a convenient and reproducible technique to detect and phenotypically characterise IFN γ secreting cells of the innate and adaptive immune system.

Disclosure Information L.K. Klauer: None. O. Schutti: None. S. Ugur: None. F. Dorane-Gard: None. N. Rogers: None. M. Weinmann: None. D. Krämer: None. A. Rank: None. C. Schmid: None. B. Eiz-Vesper: None. H.M. Schmetzer: None.

P01.11 ROLE OF EXOSOMES AS PROMOTORS OR BIOMARKERS TO STUDY ACTIVATION OF LEUKEMIA-DERIVED DENDRITIC CELLS (DC_{Leu})-MEDIATED ANTILEUKEMIC ACTIVATION OF ADAPTIVE AND INNATE IMMUNE-REACTIVE CELLS AGAINST AML-BLASTS

¹L Li*, ²V Mussack, ¹E Pepeldjyska, ¹A Hartz, ³A Rank, ³C Schmid, ¹E Özkeya, ¹S Ugur, ²M Pfaffl, ¹H Schmetzer. ¹Department for Hematopoietic transplantations, Med III, University Hospital of Munich, Munich, Germany; ²Animal Physiology and Immunology, School of Life Sciences Weihenstephan, Technical University of Munich, Munich, Germany; ³Department of Haematology and Oncology, University Hospital of Augsburg, Augsburg, Germany

10.1136/jitc-2020-ITOC7.24

Background Antileukemic responses of immune reactive cells in AML-patients need to be improved. Combinations of blast-modulatory kitM (GM-CSF+PGE₁) (vs control) convert myeloid blasts into dendritic cells of leukemic origin (DC_{Leu}), that effectively activate immune-cells against leukemic blasts. Exosomes are small (30–150 nm) membranous vesicles of endocytic origin produced by all cells under physiological and pathological conditions. Their involvement in nearly all aspects of malignant transformation has generated much interest in their biology, mechanisms responsible for information transfer and their role in immune-surveillance as well as -escape. Exosomes secreted by dendritic cells (DCs) have been shown to allow efficient activation of T lymphocytes, displaying potential as promoters of adaptive immune responses.

Materials and Methods 1) DC/DC_{Leu}-culture of blast containing AML patients' whole blood (WB) (n=10) and of healthy volunteers (n=8) with kits, T-cell enriched mixed lymphocyte culture (MLC) with kit- vs un-treated WB, functional blast-cytotoxicity and, leukemia-specificity assays (Degranulation/intracellular cytokine-assays), Flowcytometric evaluation of blast-, DC- and lymphocyte composition before or after cultures. 2) Exosomes were isolated by immunoaffinity from serum, DC- and MLC-culture supernatants of 3 AML patients and 3 healthy volunteers. Exosomes were negatively stained and characterized by transmission electron microscopy (TEM). Fluorescence nanoparticle tracking analysis (fNTA) was performed to determine exosomal size and -concentration. Obtained results were compared in AML and healthy volunteers.

Results Addition of kitM to blast-containing WB significantly increased frequencies of mature DC/DC_{Leu} and their subtypes compared to untreated WB without induction of blasts' proliferation. Immune monitoring showed a continuous increase of activated/proliferating cells of the adaptive and innate immune system after T-cell-enriched MLC using kitM