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Deciphering the crystal structure of NF-CU, a novel bispecific antibody for the treatment of acute myeloid leukemia

Anne Stinn<sup>1</sup>, G Neumann<sup>2</sup>, L Grosse-Hovest<sup>2</sup> and M Kolbe<sup>1</sup> <sup>1</sup>Max Planck Institute for Infection Biology, Germany <sup>2</sup>Synimmune GmbH, Germany

A cute myeloid leukemia (AML) is a highly malignant cancer of the myeloid cell lineage that is characterized by the rapid growth of abnormal white blood cells. Although AML is a relatively rare disease accounting for about 1% of all cancer cases (US), it is the type of leukemia showing the lowest survival rate. In the majority of all AML cases mutations in the kinase domain of the FMS-like tyrosine kinase III receptor (FLT3; CD135) are reported. Besides treatment based on chemo and radiation therapy as well as bone marrow transplantation, bispecific antibodies are studied for the use in immunotherapy against AML. These antibodies recognize tumor-associated antigens (TAAs) as well as the agonistic T-cell receptor/CD3 complex (TCR/CD3) and should thereby lead to a tumor cell-restricted activation of immune cells and specific lysis of cancer cells. In this study a structural analysis of the bispecific antibody NF-CU, the first known to date was performed. In addition to the structure of the NF-CU itself, the crystallographic structure of the antibody bound to FLT3 and CD3 was investigated. Deciphering the crystal structure of the antibody-antigens complex should give an inside into epitope recognition as well as the molecular mechanism leading to T-cell activation and tumor cell death.

## Biography

Anne Stinn is currently a PhD student at the Max Planck Institute for Infection Biology in Berlin, Germany. From 2008 to 2013 she studied Biology at the Justus Liebig University in Giessen, Germany. After completing her study she went to London as an Intern in the Research Group of Cell Death, Cancer and Inflammation (CCI) at the UCL Cancer Institute. She has started her PhD in the year 2014.

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