

Work Packages (WP), Principal Investigators and Associated Partners in the Helmholtz Alliance on Immunotherapy of Cancer

Work Packages Immunotherapy of Leukemia and Lymphoma

Coordinators: Krammer, von Kalle, Blankenstein

Specific Aim 1: Adoptive T cell Therapy (ATT) of Viral Disease and Cancer

WP1: Isolation of high-avidity T cell receptor (TCR) for “designer” T Cells

Principal Investigator: Blankenstein

Cooperators: Bernhard, Pezzutto, Schendel, Uckert, von Kalle

WP2: Genetic engineering of “designer” T Cells for Adoptive T cell Therapy (ATT)

Principal Investigator: Uckert

Cooperators: Bernhard, Blankenstein, Moldenhauer, Pezzutto, Schendel, von Kalle

WP3: Targeting Epstein Barr Virus (EBV)-specific antigens for the therapy of EBV-associated lymphoproliferative diseases

Principal Investigators: Kolb, Pezzutto

Collaborators: Bernhard, Blankenstein, Hammerschmidt, Moosmann, Schendel, Uckert, von Kalle

WP4: Generation of “designer” T cells directed against CD19 and NY-ESO-1 for treatment of B cell lymphoma and multiple myeloma

Principal Investigators: Bernhard, Pezzutto

Collaborators: Blankenstein, Schendel, Uckert, von Kalle

WP5: The clonal dynamics of adoptively transferred T cells

Principal Investigator: von Kalle

Cooperators: Blankenstein, Pezzutto, Schendel, Uckert

Specific Aim 2: Immunotherapy of Leukemia and Lymphoma

WP6: Immunotherapy of leukemia and lymphoma with bispecific Antibodies targeting CD19 or CXCR5

Principal Investigators: Lipp, Moldenhauer

Collaborators: Hämmerling, Kolb, Krämer, Pezzutto

WP7: Immunotherapy of leukemia and lymphoma with engineered antibodies and antibody fragments

Principal Investigators: Lipp, Moldenhauer

Collaborators: Breitling, Buchmann, Pezzutto

Specific Aim 3: Breaking Apoptosis Resistance

WP8: Resensitization of apoptosis-resistant leukemia and lymphoma to chemo- and immunotherapy

Principal Investigator: Krammer

Collaborators: Bernhard, Dreger, Falk, Jäger, Lipp, Luft, Moldenhauer, Pezzuto, Schendel, Uckert, von Kalle, Weiss

Work Packages Immunotherapy of Hepatocellular Carcinoma

Coordinators: Manns, Müller-Schilling

Specific Aim 1:

Combination Immunotherapy for Hepatocellular Carcinoma (HCC)

WP1: Combination T cell therapy for HBV-associated HCC

Principal Investigator: Protzer

Collaborators: Busch, Hämmerling, Knolle, Schendel, Uckert

WP2: Humoral and cellular immunotherapy of HCV and HCV-related HCC

Principal Investigators: Bruder, Pietschmann

Collaborators: Enk, Greten, Mahnke, Moldenhauer, Müller-Schilling, Protzer, Schendel, Schirmacher

WP3: Strategies to resensitize HCC cells for apoptosis and immune effector function

Principal investigators: Müller-Schilling, Schirmacher

Collaborators: Büchler, Falk, Greten, Jäger, Krammer, Lichter, Manns, Melino, Pietschmann, Protzer, Schendel, von Kalle

WP4: Identification of immunoregulatory mechanisms in patients with HCC and development of new immunotherapeutic approaches

Principal Investigators: Greten, Manns

Collaborators: Büchler, Falk, Geffers, Jäger, Müller-Schilling, Schirmacher, von Kalle

Work Packages Melanoma Studies

Coordinators: Jäger, Schadendorf

Specific Aim 1: Combination Immunotherapies to Improve Vaccination Efficacy

WP1: Combination immunotherapy: from preclinical animal model to translation

Principal Investigator: Enk

Collaborators: Garbi, Hämmerling, Mahnke, Umansky

WP2: Antigen-specific immune responses in melanoma - analysis and prognostic significance

Principal Investigator: Jäger

Collaborators: Beckhove, Enk, Falk, Schadendorf, Schendel

Specific Aim 2: Improve Tumor Recognition by Modulation of Tumor Cells and Effector T Cells

WP3: Drug-induced improvement of melanoma cell recognition and elimination by adaptive and innate effector cells

Principal Investigator: Falk

Collaborators: Bernhard, Paschen, Schendel, Uckert

WP4: High-affinity TCR for Adoptive T cell Therapy (ATT) in melanoma

Principal Investigator: Schendel

Collaborators: Bernhard, Blankenstein, Frankenberger, Kolb, Pezzutto, Uckert

Specific Aim 3: Genetic Predisposition to Autoimmunity as a Predictor of Successful Immunotherapy in Melanoma

WP5: Genetic predisposition, autoimmunity, and outcome of immunotherapy

Principal Investigator: Schadendorf

Collaborators: Falk, Kumar, Jäger, Paschen

Work Packages Immunomonitoring

Coordinators: Falk, Lipp, Schendel

Specific Aim 1: Immunomonitoring the responses of MHC/peptide-specific effector T cells and Treg and tracking of TCR-transgenic T cells after Adoptive T cell Therapy (ATT) in patients

WP1: Monitoring of specific effector cells in immunotherapy

Principal Investigators: Falk, Schendel

Collaborators: Greten, Lipp, Meuer

Topics: Leukemia and Lymphoma (WP3, 4, 5, 6, 7), Hepatitis and HCC (WP 1, 2, 4) and Melanoma (WP 1, 2)

WP2: T cell repertoire analysis, TCR identification, and T cell tracking via unique TCR sequences

Principal Investigator: Schendel

Collaborators: Blankenstein, Frankenberger, Uckert

Topics: Leukemia and Lymphoma (WP 1, 2, 4), Hepatitis and HCC (WP 1, 2), Melanoma (WP 4)

Specific Aim 2: Immunomonitoring of responses to monoclonal antibody or bispecific antibody therapy

WP3: Functional analyses of the application of monoclonal antibodies or bsAb *in vitro* and *in vivo* and cytokine/chemokine quantifications in patient serum

Principal Investigators: Falk, Lipp

Collaborators: Enk, Kolb, Moldenhauer, Pezzutto, Schadendorf

Topics: Leukemia and Lymphoma (WP 6, 7), Hepatitis and HCC (WP 1, 2)

Specific Aim 3: Monitoring the resensitization of tumor cells to apoptosis in drug and immunotherapy by determining susceptibility of tumors to effector cells, e.g., in combination therapy

WP4: Determination of resistance and sensitivity to apoptosis and immune effector cells

Principal Investigator: Falk

Collaborators: Krammer, Lipp, Müller-Schilling

Topics: Leukemia and Lymphoma (WP4, 5, 6, 7), Hepatitis and HCC (WP4), Melanoma (WP3);

Specific Aim 4: Visualization of T cells and tumor cells during tumor growth, vaccination, and rejection by *in vivo* imaging

WP 5: Visualization of T cells and tumor cells during tumor growth, vaccination, and tumor rejection

Principal Investigator: Lipp

Collaborators: Blankenstein, Bruder, Enk, Hämmerling

Topics: Leukemia and Lymphoma (WP 1, 3, 5, 6, 7), Hepatitis and HCC (WP1, 2), Melanoma (WP1)

Participating Partners

Immunotherapy of Leukemia and Lymphoma, Principal Investigators

Name	Affiliation	Place
Helga Bernhard	Department of Hematology and Oncology, University Hospital, Technical University of Munich (TUM)	Munich
Thomas Blankenstein	Department of Molecular Immunology and Gene Therapy, Max Delbrück Center for Molecular Medicine (MDC)	Berlin
Hans-Jochem Kolb	Department of Hematology and Oncology, University Hospital Großhadern, University of Munich	Munich
Peter H. Krammer	Department of Immunogenetics, German Cancer Research Center (DKFZ)	Heidelberg
Martin Lipp	Department of Molecular Tumor Genetics and Immunogenetics, Max Delbrück Center for Molecular Medicine (MDC)	Berlin
Gerhard Moldenhauer	Department of Molecular Immunology, German Cancer Research Center (DKFZ)	Heidelberg
Antonio Pezzutto	Department of Hematology and Oncology, Charité Medical School and Department of Molecular Immunotherapy, Max Delbrück Center for Molecular Medicine (MDC)	Berlin
Wolfgang Uckert	Institute of Biology, Humboldt University and Department of Molecular Cell Biology and Gene Therapy, Max Delbrück Center for Molecular Medicine (MDC)	Berlin
Christof von Kalle	Department of Translational Oncology, National Center for Tumor Diseases (NCT) and German Cancer Research Center (DKFZ)	Heidelberg

Immunotherapy of Hepatocellular Carcinoma, Principal Investigators

Name	Affiliation	Place
Dunja Bruder	Research Group Immunoregulation, Helmholtz Center for Infection Research	Braunschweig
Tim Greten Michael Manns	Department of Gastroenterology, Hepatology, and Endocrinology, Medical School Hannover	Hannover
Martina Müller-Schilling	Department of Gastroenterology, Hepatology, and Infectious Diseases, University Hospital Heidelberg	Heidelberg
Thomas Pietschmann	Department of Experimental Virology, Twincore Center for Experimental and Clinical Infection Research, Helmholtz Center for Infection Research	Hannover
Ulrike Protzer	Institute of Virology, Technical University of Munich, and Institute for Molecular Virology, Helmholtz-Zentrum München, National Research Center for Environment and Health (HMGU)	Munich
Peter Schirmacher	Institute of Pathology, University Hospital, Heidelberg	Heidelberg

Melanoma Studies, Principal Investigators

Name	Affiliation	Place
Alexander H. Enk	Department of Dermatology, University Hospital Heidelberg	Heidelberg
Christine S. Falk	Immunomonitoring Group, Translational Oncology, National Center for Tumor Diseases (NCT) and German Cancer Research Center (DKFZ)	Heidelberg
Dirk Jäger	Translational Oncology, National Center for Tumor Diseases (NCT) and University Heidelberg	Heidelberg
Dirk Schadendorf	Skin Cancer Unit, Medical Center Mannheim	Mannheim
Dolores J. Schendel	Institute of Molecular Immunology, Helmholtz-Zentrum München, National Research Center for Environment and Health (HMGU)	Munich

Immunomonitoring, Principal Investigators

Name	Affiliation	Place
Christine S. Falk	Immunomonitoring Group, Translational Oncology, National Center for Tumor Diseases and German Cancer Research Center (DKFZ)	Heidelberg
Martin Lipp	Department Molecular Tumor Genetics and Immunogenetics, Max Delbrück Center of Molecular Medicine	Berlin
Dolores J. Schendel	Institute of Molecular Immunology, Helmholtz- Zentrum München, National Research Center for Environment and Health (HMGU)	Munich

Participating Institutions

Participating Helmholtz Centers	Location
German Cancer Research Center / Deutsches Krebsforschungszentrum (DKFZ) <ul style="list-style-type: none"> • Department of Immunogenetics • Department of Molecular Immunology • Department of Translational Oncology, National Center for Tumor Diseases (NCT) • Immunomonitoring Group, Translational Oncology, National Center for Tumor Diseases 	Heidelberg
Helmholtz-Zentrum München – National Research Center for Environment and Health <ul style="list-style-type: none"> • Institute of Molecular Immunology • Institute for Molecular Virology 	Munich
Max Delbrück Center for Molecular Medicine (MDC) <ul style="list-style-type: none"> • Department of Molecular Cell Biology and Gene Therapy • Department of Molecular Immunology and Gene Therapy • Department of Molecular Immunotherapy • Department of Molecular Tumor Genetics and Immunogenetics 	Berlin
Helmholtz Center for Infection Research (HZI) <ul style="list-style-type: none"> • Research Group Immunoregulation • Department of Experimental Virology, Twincore-Center for Experimental and Clinical Infection Research 	Braunschweig / Hannover
Participating Universities	Location
Department of Dermatology, University Hospital Heidelberg	Heidelberg
Department of Medical Oncology, National Center for Tumor Diseases (NCT)	Heidelberg
Department of Gastroenterology, Hepatology and Infectious Diseases, University Hospital Heidelberg	Heidelberg
Institute of Pathology, University Hospital Heidelberg	Heidelberg
Department of Hematology and Oncology, University Hospital, Ludwig-Maximilians-University	Munich
III. Medizinische Klinik und Poliklinik des Klinikums rechts der Isar, Technical University Munich	Munich
Institute of Virology, Technical University of Munich	Munich
Department of Gastroenterology, Hepatology and Endocrinology, Medical School Hannover	Hannover
Department of Hematology and Oncology, Charité Medical School	Berlin
Institute of Biology, Humboldt University	Berlin
Skin Cancer Unit, Medical Center Mannheim	Mannheim

Associated Partners

Beckhove P , T cell Tumor Immunity group German Cancer Research Center	Heidelberg
Breitling F , Department Chip-Based Peptide Libraries, German Cancer Research Center	Heidelberg
Büchler MW , Department of General Surgery, University Hospital Heidelberg	Heidelberg
Buchmann I , Department of Nuclear Medicine University Hospital Heidelberg	Heidelberg
Busch DH , Institute for Medical Microbiology, Immunology and Hygiene, Technical University of Munich	Munich
Dreger P , Department of Medicine V, University Hospital Heidelberg	Heidelberg
Frankenberger B , Institute of Molecular Immunology, GSF-National Research Center for Environment and Health	Munich
Garbi N , Division of Molecular Immunology, German Cancer Research Center	Heidelberg
Geffers R , Department of Mucosal Immunity, Helmholtz Centre for Infection Research	Braunschweig
Hämmerling G , Division of Molecular Immunology, German Cancer Research Center	Heidelberg
Hammerschmidt W , Department of Gene Vectors, GSF-National Research Center for Environment and Health	Munich
Knolle PA , Institute for Molecular Medicine and Experimental Immunology, Friedrich-Wilhelms-University	Bonn
Krämer A , Department of Internal Medicine V, University of Heidelberg, Heidelberg and Clinical Cooperation Unit Molecular Hematology/Oncology, German Cancer Research Center	Heidelberg
Kumar R , Division of Molecular Genetic Epidemiology, German Cancer Research Center	Heidelberg
Luft T , Unit of Adaptive Immune Regulation, German Cancer Research Center	Heidelberg
Mahnke K , Department of Dermatology, University Hospital Heidelberg	Heidelberg
Melino G , Biochemistry Laboratory, IDI-IRCCS, University Tor Vergata	Rome, Italy
Meuer S , Division of Pancreatic Surgery and Molecular Pancreatic Research, Department of General Surgery, Institute of Immunology, University Hospital Heidelberg	Heidelberg
Moosmann A , Clinical Cooperative Group Molecular Oncology and Department of Gene Vectors, National Research Center for Environment and Health and Ludwig-Maximilians-University	Munich
Paschen A , Skin Cancer Unit German Cancer Research Center	Heidelberg
Umansky V , Skin Cancer Unit, German Cancer Research Center, and University Hospital Mannheim	Heidelberg Mannheim
Weiss Matthias , Cellular Biophysics Group, German Cancer Research Center	Heidelberg