



## Bedside Research – The Clinical Cooperation Groups of the GSF

The GSF uses a rather young instrument of translational research, the concept of the “Clinical Cooperation Groups,” to create an ideal link between its basic biomedical research and clinical research in its immediate vicinity. Thus, clinically relevant questions form a fertile symbiosis with experimental research guided by hypotheses. The long-term objective is the translation of new diagnostic and therapeutic strategies into clinical practice.

In line with the translational philosophy, the GSF developed an innovative concept for the cooperation with hospitals back in 1994. As opposed to the additional funding of clinical units, as it was common at the Helmholtz Centers until then, the selective funding of specific, particularly excellent projects was established. On the basis of the excellence and the relevance to the goals of the

GSF there are currently 13 Clinical Cooperation Groups (KKGs). In many areas the KKGs have become the crystallization seed for the intensive exchange of ideas between fundamental research and clinical research at the GSF. It is of decisive significance that isolated research islands have not been developed. On the contrary, most of the KKGs focus on big common issues. Thus, many

| KKG Focus I<br><b>Identification of Genotype /<br/>Phenotype in Chronic<br/>Diseases</b>   | KKG Focus II<br><b>Inflammatory Reactions and<br/>Aberrant Immune<br/>Responses</b>  | KKG Focus III<br><b>Modulation of the Immune<br/>System to Fight Chronic<br/>Diseases</b>  |
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| Pathogenesis of Acute Myeloid<br>Leukemia<br><i>Prof. Hiddemann</i><br><br>Molecular Oncology<br><i>Dr. Gires</i><br><br>Osteosarcomas<br><i>Dr. Nathrath</i><br><br>Molecular Neurogenetics<br><i>Prof. Wurst</i> | Inflammatory Lung Diseases<br><i>Dr. Frankenberger</i><br><br>Environmental Dermatology and Aller-<br>gology<br><i>Prof. Behrendt</i><br><br>Immune Regulation in Childhood<br><i>Dr. Krauss-Etschmann</i> | Hematopoietic Cell Transplants<br><i>Prof. Kolb</i><br><br>Tumor Therapy with Hyperthermia<br><i>Prof. Issels</i><br><br>Antigen-Specific Immunotherapy<br><i>Prof. Busch</i><br><br>Pediatric Tumor Immunology<br><i>Dr. Behrends</i><br><br>Immunotherapy of Urological Tumors<br><i>Dr. Pohla</i> |
| <b>Platform technologies</b>   |  |  |
| Immune Monitoring Platform<br><i>Prof. Schendel</i><br><br>GMP Cleanroom with Quality<br>Control Laboratory<br><i>I. Bigalke/S. Tippmer</i>  | Antibody Platform<br><i>Dr. Kremmer</i><br><br>Central Cell Sorting<br><i>Dr. Ellwart</i>  | Keeping of Animals – Immune-Defi-<br>cient and Other Transgenic Mouse<br>Strains<br><i>Prof. Mocikat</i>   |

## KKG Focus III: Immune Modulation

The work conducted by the Clinical Cooperation Groups, which deals with questions of immunomodulation, may be considered exemplary for translational research at the GSF. The human immune system has the task of fighting infections, but it is principally also capable of repelling malignant tumors. However, both tumor cells and virus-infected cells can evade the attack of the immune system. In order to utilize immunological mechanisms as a therapeutic option for such diseases, on the one hand a better understanding of the cellular and molecular principles is required, which help the organism defend itself against pathogens. On the other hand on the basis of these mechanisms methods for the specific stimulation of the immune system must be developed. This makes it an exemplary network of experimental fundamental research and application on patients. In order to do justice to this translational philosophy the GSF has established five Clinical Cooperation Groups (KKGs) in the field of immunotherapy. The KKGs "Hematopoietic Cell Transplants", "Immunotherapy of Urological Tumors", "Tumor Therapy with Hyperthermia," "Antigen-Specific Immunotherapy" and "Pediatric Tumor Immunology" work on the new immunological therapies for leukemias, kidney cancer, soft tissue tumors and viral infections. The KKG "Immune Monitoring" is at the disposal of all those working groups which are interested in immunotherapy as an overall platform. It measures immune responses developed by patients following immunotherapy. This KKG is also committed to the translational spirit in that it develops innovative diagnostic methods on the basis of new fundamental insights and translates them into practical applications immediately.

**The biggest research focus within the Clinical Cooperation Groups of the GSF is committed to the modulation of the immune system. The platform technologies provide a common basis. They are open to all Clinical Cooperation Groups of the GSF, but also to external clinical partners.**



Six of the thirteen Clinical Cooperation Groups of the GSF have settled in the immediate vicinity of the Klinikum Großhadern of the Ludwig-Maximilians-University Munich (large complex of buildings in the picture).

Solid financing on four pillars: the Clinical Cooperation Groups (KKGs) are supported jointly by the GSF, the clinical partner in each group and special funds from the program-oriented funding of the Helmholtz-Gesellschaft. Furthermore, the KKGs also raise third-party funds themselves.

## Supported by Four Pillars

The basic idea of the KKG concept at the GSF is: all partners involved contribute their own resources to document their interest in the work of the KKGs. Thus, each KKG basically has three sources of funds: the first and central element is specific funding to employ staff and provide resources for research and investments. These funds are raised through the GSF within the framework of program-oriented support and passed

directly on to the KKGs. As second and third pillars monetary partners and the GSF provide staff, other resources and investments from their own resources as well as the infrastructure required to conduct the research work. With this financing structure supported by all partners together, a solid basis for successfully building a bridge between basic research and the clinic has been provided.

The institutional support is complemented by the raising of third-party funds as a fourth funding pillar. For the KKGs this is an important factor for the support of their work, which also provides new impulses and often allows the extension of the research scope.

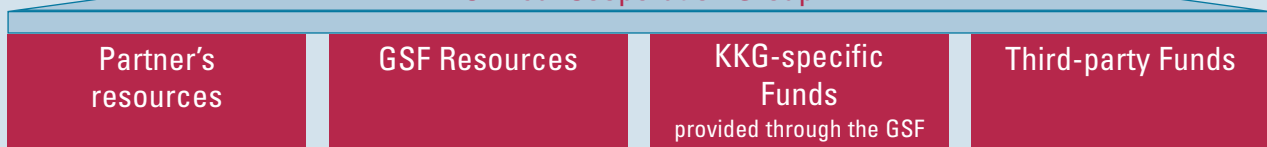
common interests evolve, which have also resulted in the frequent interactions of the individual KKGs with each other.

## Strong Clinical Partners

The Clinical Cooperation Groups in the GSF are established as temporary projects on the basis of existing teams of scientific excellence and are integrated in the Helmholtz Programs. At present there are Clinical Cooperation Groups together with Ludwig-Maximilians-University, the Technical University and the Max Planck Institute for Psychiatry in Munich as well as the Asklepios-Fachkliniken in Gauting.

Many scientists from the KKGs also work at the clinics and are experienced by patients as competent and responsible medical experts: this strengthens a relationship with patients based on trust – an important prerequisite for their willingness to cooperate.

### Clinical Cooperation Group



## The Clinical Cooperation Groups of the GSF and Their Partners

| Clinical Cooperation Group                   | GSF-Institute  | External Partner   | Head   |
|--|--|--|--|
| Inflammatory Lung Diseases                   | GSF Institute of Inhalation Biology  | Asklepios-Fachkliniken<br>Munich-Gauting   | Dr. Marion Frankenberger<br>frankenberger@gsf.de<br>Tel.: 089/8932-3730                          |
| Molecular Neurogenetics                      | GSF Institute of Developmental<br>Genetics                                       | Max Planck Institute for Psychia-<br>try, Munich   | Prof. Dr. Wolfgang Wurst<br>wurst@gsf.de<br>Tel.: 089/3187-2887                                  |
| Environmental Dermatology and<br>Allergology | GSF Institute of Epidemiology  | Clinic for Dermatology and Aller-<br>gology of the Technical University<br>(TU) of Munich  | Prof. Dr. Heidrun Behrendt<br>zaum@lrz.tu-muenchen.de<br>Tel.: 089/4140-3351                     |
| Tumor Therapy with Hyperthermia              | GSF Institute of Molecular<br>Immunology   | Med. Clinic III, Klinikum<br>Großhadern of the Ludwig-Maxim-<br>ilians- University (LMU) Munich  | Prof. Dr. Rolf Issels<br>rolf.issels@med.uni-muenchen.de<br>Tel. 089/7095-4768                   |
| Hematopoietic Cell Transplants               | GSF Institute of Molecular<br>Immunology   | Med. Clinic III, Klinikum<br>Großhadern of the LMU Munich  | Prof. Dr. Hans-Jochem Kolb<br>hans.kolb@med.uni-muenchen.de<br>Tel. 089/7095-4241                |
| Pathogenesis of Acute Myeloid<br>Leukemia    | GSF Institute of Clinical Molecular<br>Biology and Tumor Genetics                | Med. Clinic III, Klinikum<br>Großhadern of the LMU Munich  | Prof. Dr. Wolfgang Hiddemann<br>wolfgang.hiddemann@<br>med.uni-muenchen.de<br>Tel. 089/7095-2550 |
| Antigen-Specific Immunotherapy               | GSF Institute of Molecular<br>Virology   | TU Munich, Klinikum rechts der<br>Isar, Inst. of Med. Microbiology,<br>Immunology and Hygiene  | Prof. Dr. Dirk Busch<br>dirk.busch@gsf.de<br>Tel.: 089/3187-3655                                 |
| Pediatric Tumor Immunology                   | GSF Institute of Clinical Molecular<br>Biology and Tumor Genetics                | Pediatric Clinic and Outpatient<br>Dept. of the TU Munich at the<br>Municipal Hospital Munich<br>Schwabing   | Dr. Uta Behrends<br>uta.behrends@lrz.tum.de<br>Tel.: 089/3068-2932                               |
| Molecular Oncology                           | GSF Dept. of Gene Vectors  | Clinic for Otorhynolaryngology of<br>the LMU Munich  | Dr. Olivier Gires<br>olivier.gires@med.uni-muenchen.de<br>Tel.: 089/7095-3895                    |
| Immunotherapy of Urological<br>Tumors        | GSF Institute of Molecular<br>Immunology   | Urological Clinic and Outpatient<br>Dept., Klinikum Großhadern of the<br>LMU Munich  | Dr. Heike Pohla<br>heike.pohla@med.uni-muenchen.de<br>Tel.: 089/7095-4875                        |
| Immune Monitoring                            | GSF Institute of Molecular<br>Immunology, GSF Institute of<br>Molecular Virology | Institute of Med. Microbiology,<br>Immunology and Hygiene of the<br>TU Munich, Laboratory for Tumor<br>Immunology (LTI), LIFE Center of<br>the Klinikum Munich Großhadern,<br>LMU Munich | Prof. Dr. Dolores Schendel<br>schendel@gsf.de<br>Tel.: 089/7099-301                              |
| Immune Regulation in Childhood               | GSF Institute of Molecular<br>Immunology   | Dr. von Haunersches Kinderspital,<br>Pediatric Clinic and Outpatient<br>Dept. of the LMU Munich  | Dr. Susanne Krauss-Etschmann<br>susanne.krauss-etschmann@gsf.de<br>Tel. 089/5160-7706            |
| Osteosarcoma                                 | GSF Institute of Pathology   | Pediatric Clinic of the TU Munich<br>in the Munic. Hospital Munich-<br>Schwabing   | Dr. Michaela Nathrath<br>michaela.nathrath@gsf.de<br>Tel: 089-3068-3076                          |

It was as long ago as 1994 that the GSF developed an innovative concept to support cooperation with clinics. With the establishment of what are now 13 Clinical Cooperation Groups the GSF initiated the development of an intensive exchange of ideas between basic research and clinical research.