

T_CELL_CONNECT_EUROPE (TCC_EUROPE): Proposal for an EFIS-IL study group

Summary The overarching research interest of the EFIS-IL study group T_CELL_CONNECT_EUROPE (TCC_EUROPE) is to study fundamental aspects of T cell-mediated immunity in the health & disease to provide new concepts of T cell-based immunotherapies. TCC_EUROPE will connect basic and clinical researchers in the field of T cell biology to foster the development of interdisciplinary and collaborative translational approaches.

1. Research Area

Understanding and altering T cell effector differentiation and memory formation and maintenance is key for therapeutic intervention in a wide range of immune-mediated pathologies including chronic inflammation, autoimmunity and allergy, transplant rejection, for combating (emerging) infectious diseases as well as for restoring/maintaining immune function in the aging immune system. A better understanding of the cellular and molecular control of T cell development & function is essential for the development of novel diagnostic tools and vaccination strategies, as well as for improved and novel approaches in cancer therapy. In addition, the impressive development of *-omics*, imaging as well as genetic manipulation technologies during the last couple of years (low-input/single-cell RNA-seq, epigenomics, proteomics, metabolomics, high-resolution microscopy, Crispr/Cas9, just to name a few) is revolutionizing the way of how T cell function in health & disease can be analyzed. At the same time, it is clear that an integrated usage of this wide range of techniques cannot be handled by a single laboratory but rather requires transnational interdisciplinary collaborative approaches. The aim of TCC_EUROPE is to connect basic and clinical researchers in the field of T cell biology to foster the development of translational collaborations.

2. The core group of proponents

The proposing core groups consists of a group of 33 researchers (including 13 female scientist = 39%) from 12 countries. The activities will be coordinated by a team of 6 members (including 2 female scientists = 33% female scientists) from 5 European countries. Since 2011, 10 - 12 members of the proposing consortium are meeting once a year for an informal small workshop (always in Tyrol, Austria, with support of EMBO) and the 6th meeting is scheduled for January 2018. One major result of this workshop in 2015 was the successful acquisition of a Marie Skłodowska-Curie Innovative Training Network (ITN-ETN) entitled “ENLIGHT-TEN - European Network Linking Informatics and Genomics of Helper T cells” (grant agreement No.: 675395)(www.enlight-ten.eu). This ITN provides cross-disciplinary training in T cell immunology and big data analysis in order to train a new generation of researchers to exploit the power of emerging technological platforms. Thus, there is already a demonstrated long-time commitment for collaborative work among the core proponents. Of note, ENLIGHT_TEN will also organize a scientific satellite meeting at ECI2018 in Amsterdam.

3. Organization of EFIS-IL TCCE study group meetings and financing

We will organize an annual EFIS-IL study group meeting. There is already an existing network structure allowing an easy integration of the annual EFIS-IL TCC_EUROPE group meeting. Ludger Klein and Wilfried Ellmeier (together with Harald von Boehmer) are organizers of the “Midwinter conference: Advances in Immunobiology” that is held every 2nd year in Seefeld, Tyrol, Austria (approx. 25 invited speakers, 180 participants; for the 2017 program see: www.meduniwien.ac.at/immunologie/ellmeier/MWC2017.pdf). The 3rd MWC is planned for January 2019. Therefore, in odd years the EFIS-IL study group meeting will be a satellite meeting within the structure of the Seefeld conference. This allows a cost-effective organization of the study group meeting (conference center, etc.) In even years, the EFIS-IL study group meeting will take place as a 2-day event in a centrally-located European city that is easy reachable by plain/train. We will always select a different city to have a broad inclusion of several countries. To ensure cost-effectiveness, local TCC_EUROPE members will host the meeting at their respective research institution. We plan to have some local industry sponsors at the site (exhibition from local distributors, e.g. of antibody companies, flow cytometry companies, etc.) and we will

also discuss to request from each TCC_EUROPE member a small participation fee. With this funding we will be able to pay some local expenses in connection to the meeting as well as to invite 1-2 keynote speaker to the annual TCC_EUROPE meeting (see below).

Planned study group meetings: Odd years: connected to MWC-Immunobiology as satellite meeting
Even years: 2 day event in a centrally-located European city

4. Inclusion of new members in TCC_EUROPE

To foster collaborative work, it is essential to include new members in the TCC_EUROPE study group. Thus, although the initial consortium consists of a group of 33 people, we want to be open for additional members to cover topics that are not yet included or are emerging. As described above, TCC_EUROPE study group meetings will be held every 2nd year as a satellite meeting of the Midwinter conference. We will encourage junior PIs working in the field of T cell biology to submit abstracts to MWC and to include them in the main sessions of the conference as well as to attend the satellite interest group meeting. Further, we will also encourage invited MWC conference speakers to attend the satellite TCC_EUROPE study group meeting. In even years when TCC_EUROPE is organized in a central European city, we will always announce the interest group meeting publically, e.g. via national immunological societies, EMBO fellow networks, and also via EFIS. Dependent on the venue, we expect that up to 100 people can participate. At each annual meeting, we will also invite 1-2 experts in a particular field (single cell RNA-seq, Bioinformatics, mass spectrometry, CyToF, microscopy, industry leaders, etc) to explore and expand our knowledge and pick up on new technologies.

5. Anticipated outcome and commitment of participating PIs

As mentioned above, the core proponents successfully established a Marie-Curie ITN, demonstrating the importance of regular meetings as a seed for new enterprises. We expect that the extension of this core group with European T cell immunologists, clinical researcher as well as the inclusion of junior PIs together with the important topics addressed by TCC_EUROPE members will open new opportunities for collaborations. As a result of this unique setting, we also expect that this will foster submissions of research proposals within the new EU framework program 9 (FP9). Needless to say that there is also a strong commitment from the proponents to contribute to a special issue of *Immunology Letters*.

6. List of participants (in alphabetical order)

Francesco Annunziato (ITA)	Jochen Huehn (GER)*	Anna Rudin (SWE)
Franscesca Barone (UK)	Johannes Huppa (AUT)	Benoit Salomon (FRA)
Andreas Beilhack (GER)	Lukas Jeker (CH)	Janneke Samsom (NED)*
Barbara Bohle (AUT)	Ludger Klein (GER)*	Ana Sousa (POR)
Ana Cumano (FRA)	Luis Graca (POR)	Tim Sparwasser (GER)
Gerard Eberl (FRA)	Petra Hoffmann (GER)	Jessica Strid (UK)
Matthias Edinger (GER)	Michelle Lintermann (UK)	Marc Veldhoen (POR)*
Wilfried Ellmeier (AUT)*	Adrian Liston (BE)	Lucy Walker (UK)*
Lauro Elo (FIN)	Michael Meyer-Hermann (GER)	Dave Whithers (UK)
Nicolas Fazilleau (FRA)	Anne Müller (CH)	Thomas Wekerle (AUT)
Vigo Heissmeyer (GER)	Pärt Peterson (EST)	Christiana Zielinski (GER)

* Member of the coordination group