T-RAFIC
Tracking and controlling therapeutic immune cells in cancer

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CALL FOR 18 DOCTORAL CANDIDATE POSITIONS

T-RAFIC – Tracking and controlling therapeutic immune cells in cancer is a Doctoral Network of the Marie Skłodowska-Curie program co-funded by the European Union, the Swiss State Secretariat for Education, Research and Innovation (SERI) and the UK Government.

Who we are

T-RAFIC is a scientific network comprising 13 academic and four industrial partners from nine European countries. Its mission is to train the next generation of experts in the field of cell therapies of cancer.

T-RAFIC starts on March 1st, 2025, and will run for four years. Each Doctoral Candidate (DC) will be employed at a host institution for up to 36 months, working on a dedicated scientific project while preparing a doctorate.

A structured training program will bring together all DC for scientific meetings, skill development workshops, career events and international conferences. Additionally, the DC will undertake several secondments at different institutions within the network to gain specialized knowledge and acquire essential methodologies for their research projects.

Scientific Scope

Cancer immunotherapies have been established in a growing number of clinical indications and the pace of development is massively accelerating. Currently over 6.000 clinical trials are investigating immune-related treatments in oncology especially in combinations. It includes both adoptive cellular therapies and immune modulating treatments such as immune check point blockade. In contrast, the understanding of how such therapies mediate their mode of action is still mostly poorly understood. In particular, the role of distribution and relocation of immune cells after therapeutic interventions remains unknown. This is surprising, as immune cell interactions are a hallmark of therapeutic immune responses. T-RAFIC will enhance understanding of immune cell trafficking under therapeutic influence. It will open new paths and avenues to treatments, boost their efficacy and help prioritizing the plethora of immune therapeutic combinations. In the past, detailed analysis of cellular distributions was facing technical barriers. Advances in technologies, now permit tracking and visualization of cells in vitro and in vivo at an unprecedented resolution, allowing for the first time studies on immune cells under therapeutic influence. This emerging field of research has enormous potential and key importance for next generation of researchers in oncology and beyond. However, experts in this field are missing and this threats European research, development and medicine. Therefore, T-RAFIC joins forces of 13 academic and four industrial partners from nine European countries to conduct an innovative and interdisciplinary approach combining cell imaging with bioinformatics, cell engineering and clinician expertise. The network bundles recognised expertise in cancer immunotherapies, empowering European research and innovation and ensuring a sustainable cooperation in science and training.

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We offer: Cutting edge research projects and training with leading experts in the field of cell and immune therapy; employment contract up to three years with the benefits of the EU Marie Skłodowska-Curie program with the possibility of earning a doctoral degree (PhD or equivalent).

We seek: Excellent scientists seeking to obtain a doctorate, holding a Master's degree or equivalent in natural sciences or related disciplines (such as medicine or pharmacy); practical skills in modern laboratory work, preferentially combined with experience in animal experiments are required.

Your profile: doctoral candidates, i.e. not already in possession of a doctoral degree at the date of recruitment. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible. You cannot have spent more than 12 months within the past 36 months in the country where the position you are applying for is located (mobility rule); you must be proficient in the English language both written and spoken (proof required).

Open positions

Project 1 (DC16): Development of computational tools to study CAR-T cell- tumor interaction during *in vivo* imaging. In Switzerland, Bellinzona, at Fondazione per l'Istituto di Ricerca in Biomedicina, supervised by **Santiago González**. Indicative monthly gross salary[1]: 4.972,40€

- Project 2 (DC1): Tracking of therapeutic Adaptor CAR-T cells in dependency of adaptor characteristics. In Germany, Bergisch Gladbach, at Miltenyi Biotec B.V. & Co KG, supervised by **Boris Engels**. Indicative monthly gross salary[1]: 3.942,20€

Specific requirements for this position: Theoretical and practical and experience in molecular and cellular biology are highly beneficial. Experience with animal experimentation is beneficial but willingness to work with animals is a prerequisite.

- Project 3 (DC2): PET imaging of CAR-T cell distribution and trafficking & immuno-PET of CAR-T cell therapy responses. In the Netherlands, Amsterdam, at Stichting VUMC, supervised by **Tuna Mutis**. Indicative monthly gross salary[1]: 4.326,40€

Specific requirements for this position: The desired applicant holds a master's degree in biomedical sciences, pharmacy, medicinal chemistry or a comparable degree program. We seek candidates with a good foundation in cellular immunology, molecular biology and radiochemistry. Experience in retroviral gene (CAR) transfer in T cells, some background in radiochemistry and animal experiments are highly desirable.

- Project 4 (DC3): Detection of adverse effects and safety switch-mediated *in vivo* cell ablation by a reporter gene system. In Germany, Munich, at Klinikum rechts der Isar der Technischen Universität München, supervised by **Wolfgang Weber**. Indicative monthly gross salary[1]: 3.942,20€

Specific requirements for this position: The desired applicant holds a master's degree in pharmacy, medicinal chemistry or a comparable degree program. Furthermore, experience in peptide synthesis is expected. Additional experience in radiochemistry and nuclear medicine imaging is desirable.

[1] This indicated amount of monthly gross salary is not legally binding and serves solely as a guideline. This indicated amount of monthly gross salary is calculated based on the living allowance, the mobility allowance and the country correction coefficient for living allowances as described in Horizon Europe, Work Programme 2023-2024, 2. Marie Skłodowska-Curie Actions, European Commission Decision C(2022)7550 of 6 December 2022. The different country correction coefficients are the reason for the different amounts. The indicated rates do not include all employer and employee's taxes and contributions. Each amount of gross salary will have to be adjusted to each Doctoral Candidate's individual situation, considering potential additional allowances and the internal regulations of the respective Employing Institution.

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- Project 5 (DC17): Developing digital twins of the tumors infiltration process from single cell RNA sequencing (scRNAseq) data using machine learning and network inference approaches. In United Kingdom, Nottingham, at Intelligent Omics Limited, supervised by **Graham Ball**. Indicative monthly gross salary[1]: 5.254,6€
Specific requirements for this position: We Seek individuals with a good foundation in Molecular Biology, Systems Biology or Immunology. Essential skills include an ability to source, assess and process large multi-omics and molecular data, with a particular emphasis on scRNASeq data. Desirable skills include some knowledge of the application of data science, computational biology and/or machine learning in the biological space.

- Project 6 (DC4): Tracking of therapeutic syngeneic CAR-T cells. In Germany, Munich, at Ludwig-Maximilians-Universität München, supervised by **Sebastian Kobold**. Indicative monthly gross salary[1]: 3.942,20€
Specific requirements for this position: Experience with animal experimentation is beneficial but willingness to work with animals is a prerequisite

- Project 7 (DC5): Analyzing the relevance of ileal MAdCAM-1/a7b7 axis in CAR-T cell distribution and performance. In France, Paris, at Institut Gustave Roussy, supervised by **Laurence Zitvogel and Camille Bigenwald**. Indicative monthly gross salary[1]: 4.557,60€
Specific requirements for this position: Experience with animal experimentation is beneficial but willingness to work with animals is a prerequisite

- Project 8 (DC6): Impact of CAF features on immune cell recruitment and interactions in B-cell lymphomas. In France, Rennes, at Institut National de la Santé et de la Recherche Médicale, supervised by **Karin Tarte**. Indicative monthly gross salary[1]: 4.557,60€

- Project 9 (DC7): *In situ* evaluation of antigen-specific T cell localization, crosstalk and behavior. In Denmark, Copenhagen, at Technical University of Denmark, supervised by **Sine Reker Hadrup**. Indicative monthly gross salary[1]: 5.088,00€
Specific requirements for this position We seek a candidate with experience in confocal microscopy and/or immunohistochemistry, interest and experience in T cell detection and characterizations. Interest in technical development. General knowledge related to the complexity of the tumor microenvironment.

- Project 10 (DC8): Identifying microbiota-related strategies to improve cancer immunotherapies. In Italy, Milan, at Humanitas University, supervised by **Maria Rescigno**. Indicative monthly gross salary[1]: 3.911,60€
Specific requirements for this position: While theoretical knowledge in tumor immunology and microbiology is preferred, it is not a mandatory requirement for this position.

- Project 11 (DC9): Voluntary exercise in combination with adoptive cell transfer taking advantage of mouse tumor models. In Denmark, Copenhagen at Region Hovedstaden University Hospital Herlev, supervised by **Per thor Straten**. Indicative monthly gross salary[1]: 5.088,00€
Specific requirements for this position: Emphasis will be put on experience with animal work as well as cell culture (incl. primary cells), and flow cytometry. You enjoy communicating both in writing and speaking, have experience presenting your research, and wish to further develop your scientific writing and oral communication skills to reach a professional level.

- Project 12 (DC10): Dendritic cell - T cell interaction in response to tumor-targeted therapy in melanoma. In Austria, Innsbruck, at Medical University of Innsbruck, supervised by **Patrizia Stoitzner**. Indicative monthly gross salary1: 4.214,20€

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Specific requirements for this position: expertise with mouse tumor models, immunological assays, flow cytometry, immunofluorescence/immunohistochemistry of tumor tissue, optional: cell death and DAMP release assays

- Project 13 (DC11): Leveraging mucosal-associated invariant T (MAIT) cells in the treatment of melanoma and gastric cancer: optimizing tumor mobilization and infiltration in 3D contexts. In the Netherlands, Amsterdam, at Amsterdam UMC, supervised by **Tanja D. de Gruijl**. Indicative monthly gross salary[1]: 4.326,40€
Specific requirements for this position: We seek a highly motivated PhD student to join our enthusiastic research team which is embedded in the Immunotherapy Lab of the Medical Oncology department of Amsterdam UMC. Experience with T-cell cultures and spatial and/or flow cytometry analyses is preferred but not required.

- Project 14 (DC12): Use of chemokine receptor pairs for site-specific recruitment of adoptively transferred therapeutic T cells. In Germany, Munich, at Ludwig-Maximilians-Universität München, supervised by **Sebastian Kobold**. Indicative monthly gross salary[1]: 3.942,20€
Specific requirements for this position: Experience with animal experimentation is beneficial but willingness to work with animals is a prerequisite

- Project 15 (DC13): Optimizing the efficacy of adoptively transferred therapeutic T cells by strengthening their interaction with tumor cells. In France, Paris, at INSERM Institut Gustave Roussy, supervised by **Emmanuel Donnadieu**. Indicative monthly gross salary[1]: 4.557,60€
Specific requirements for this position: In-depth knowledge and hands-on experience in immunology and cell culture are required. Dynamic fluorescence imaging of immune cells is a plus.

- Project 16 (DC14): Boosting therapeutic TCR-engineered CD8 T cell tumor responses with engineered $CD4^+$ T-helper cells. In Norway, Oslo, at Oslo University Hospital, supervised by **Johanna Olweus**. Indicative monthly gross salary[1]: 4.975,80€
Specific requirements for this position: Candidates with experience with cloning and viral transduction, as well as experience with human immune cells in in vitro assays, flow cytometric analysis and a certificate for animal experimentation will be prioritized.

- Project 17 (DC18): Impact of antigen release on composition and migration of tumor resident, peripheral and adoptively transferred T cells. In Switzerland, Zurich at InCephalo Therapeutics AG, supervised by **Johannes vom Berg**. Indicative monthly gross salary[1]: 4.972,40€
Specific requirements for this position: : Candidates preferably have prior experience in mouse immunology, or glioma models, stereotactic surgery and flow cytometry or multiplex immunofluorescence and automated image analysis pipelines.

- Project 18 (DC 15): Using TME-signals to boost and redirect CAR engineered cells. In Germany, Munich, at Ludwig-Maximilians-Universität München, supervised by **Sebastian Kobold**. Indicative monthly gross salary[1]: 3.942,20€
Specific requirements for this position: Experience with programming and machine learning is an advantage. Experience with animal experimentation is beneficial but willingness to work with animals is a prerequisite.

Application procedure

The two-stage application procedure will be carried out in compliance with the Code of Conduct for Recruitment and the Charter for Researchers.

- The first stage consists of sending your documents and filling out the required information within the application portal of T-RAFIC, by **April 30, 2025**. Please note that we will only evaluate fully

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completed application forms that are submitted via the application portal of T-RAFIC before the deadline.

- Second stage: Selected candidates from the first stage will be invited for interview, possibly remotely, with the supervisor of the position for which the candidates have applied. Application or travel costs cannot be reimbursed.

Criteria of selection

The same procedure and criteria of selection will apply for all positions.

1. First stage of selection:

a. Eligibility check carried out by T-RAFIC management team:

- The candidates have not been awarded a doctoral and wish to obtain a doctorate. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible.
- The candidates must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 years immediately prior to his/her recruitment.

Only candidates that fully meet criteria of eligibility will be assessed by the supervisors.

b. Assessment of the application forms by the Project Leaders and their team supervising the position which has been selected as first choice by the candidates:

- Quality of education (degrees and transcript)
- Education matching to the skills required
- Quality of research experience
- Research experience matching to required skills
- Quality of language skills
- Quality of references
- General evaluation of profile based on motivations and personal skills
- Experience of Mobility (geographical, sectoral, virtual)

The Project Leaders of T-RAFIC will have the opportunity to assess candidates who have selected their projects as second or third choice. This will depend on the primary outcome of evaluation.

2. Second stage of selection:

- Quality of the presentation
- General evaluation of profile depending on motivations and personal skills
- References

More information about T-RAFIC

www. itn-trafic.eu

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