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Molecular mechanisms of resistance to anticancer therapy

The past two decades have revealed the success of targeting the "oncogenic addiction" of cancer cells, which makes them extremely dependent on one or few genes for survival. Targeted therapies in cancer are based on the inhibition of these oncogenes and provide substantial benefits over standard chemotherapy. However, resistance remains the main barrier to targeted therapy and the greatest challenge for clinicians and researchers. Therefore, understanding the molecular mechanisms of resistance is a crucial need to develop new therapeutic strategies and achieve a durable response. By using biochemistry, molecular biology and genome-wide approaches, this project aims to decipher the mechanisms of resistance to known anticancer agents with the goal of designing new therapeutic strategies.

We are looking for an internship student in the field of biology to join our team through the Erasmus program (preferably at Master level). The student will work under the direct supervision of a researcher in the group (Agnese Cristini) and a PhD student (Lara Fernandez Martinez). He/she will work with human cancer cell lines and will perform biochemistry techniques (*e.g.* Western Blotting), confocal and/or high content microscopy (*e.g*. array scan) and molecular biology techniques (*e.g.* RNA work, quantitative PCR, transcription-related techniques). Previous experimental internship in a lab is desired. Interest in DNA damage, chromatin, transcription, bioinformatics or oncogenic signalling will be an advantage. Training will be provided in all the aspects of the work.
The starting date of the internship is flexible and depends on the Erasmus program. The duration is fixed at 6 months, with no possibility of change.

General information about the work group, the university and the region

Our team (SIGNATHER team, CRCT) is led by Prof Gilles Favre and Dr Olivier Sordet and is organized in 3 highly integrated research axes (genome instability, biotechnology and clinics). The student will interact closely with all group members and be fully involved in meetings and social activities. In the team, we have strong expertise in student supervision as we constantly host national and international internship students (including Erasmus students) and currently have five PhD students in the group. We are located at the CRCT, a new center built in 2014 and representing the research unit of the Oncopole campus, which is the 1st example in France of symbiosis between research, care and pharmaceutical companies. The CRCT comprises 18 research groups and a cutting edge technological cluster (proteomics, flow cytometry, imaging, genomics…). Toulouse, located in the south-west of France, is the capital of the Occitanie region ranging from the Pyrenees mountains to the Mediterranean Sea, both easily accessible by train from the city. The university represents a big part of the life of the town, which has been ranked "the best student city" in France (> 115,000 students). The charm of the city is given by the sunny weather, the Garonne river, the pink buildings of the old town, the great traditional food and the numerous festivals and cultural events especially in spring and summer.
Do not hesitate to contact us if you have any questions.

References

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