RENALTRACT

Horizon 2020 – Marie Sklodowska-Curie Actions
Innovative Training Network (ITN)
Development and Disease of the Renal Tract

2016

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➢ News

Focus on RENALTRACT Partner Organisations

RENALTRACT Partner Organisations are providing specialised training to the students. They are able to bring their expertise and complementary skills in targeted fields. In the last Short-Course on "Transferable Skills", **NIKON** shared technical views on STED, N-SIM and Storm applications when **MyScienceWork** organised practical exercises and exchanges on scientific communication. It was very useful to the students as they can use these techniques for their project and to improve their visibility and reputation on social networks.
In June 2017, **l'Atelier des Jours à Venir** will make students aware of their responsibilities towards science and scientific values.

International consortium including two teams part of RENALTRACT network shows that " 'Teashirt' gene links autism and kidney problems"

The teams of **Laurent Fasano ("Developmental Biology Institute of Marseille, CNRS / Aix-Marseille University)** and **Adrian Woolf (University of Manchester)** had already implicated the Tshz3 gene as being essential for development of smooth muscle in the wall of the ureter. In a new article, published in the journal Nature Genetics, the international research consortium led by Laurent Fasano and including the Woolf' team shows, in human and in mouse models, the existence of a direct link between TSHZ3/Tshz3 deletion and a subtype of

autism spectrum disorder, characterized by the association of autistic traits and congenital abnormalities of the urinary tract.

TSHZ3 deletion causes an autism syndrome and defects in cortical projection neurons. Caubit X, Gubellini P, Andrieux J, Roubertoux PL, Metwaly M, Jacq B, Fatmi A, Had-Aissouni L, Kwan KY, Salin P, Carlier M, Liedén A, Rudd E, Shinawi M, Vincent-Delorme C, Cuisset JM, Lemaitre MP, Abderrehamane F, Duban B, Lemaitre JF, Woolf AS, Bockenhauer D, Severac D, Dubois E, Zhu Y, Sestan N, Garratt AN, Kerkerian-Le Goff L, Fasano L. Nat Genet. 2016 Sep 26. doi: 10.1038/ng.3681. PMID: 27668656

➢ Events

RENALTRACT Short-Course 1 "Transferable Skills" – 5 to 9 September 2016 – Paris, France – RENALTRACT previous event

First Short-Course of RENALTRACT project took place in Paris from 5th to 9th September on the theme **"Transferable Skills"**. It gathered Partner Organisations **MyScienceWork** on e-reputation and scientific communication and **NIKON** on microscopy with external speakers on ethics, scientific integrity and careers in academic and non-academic fields. **Mosaiques Diagnostics** also provided a webinar on commerce and entrepreneuship.

RENALTRACT/EURenOmics combined meeting – 3 to 5 May 2017 – Berlin, Germany – RENALTRACT forthcoming event

Last **FP7 EU project EURenOmics meeting** will take place in Berlin, Germany from 3rd to 5th May 2017 and will see RENALTRACT students getting involved in exchanges of views, presenting posters and attending sessions organised in the frame of EURenOmics Workshop. This will be a great occasion to foster networking skills of the students and having crossed views on fields related to their project.

➢ Student life

Zenglai Tan – ESR 1 – University of Oulu

Q: Can you tell us about recent progress in your project?

A: "My project is to try to model Kidney development with CRISPR-mutant kidney organoid derived from mouse Embryonic Stem Cells and Nephron Progenitor Cells. Recently, I am focusing on the CRISPR-target mouse Embryonic stem cells. The most difficult part of the project is how to analyze the phenotype of the CRISPR-mutant kidney organoid. In this case, I seclected Wnt4 and Wt1 as the first round to target mouse ES cells, since the phenotype of this two genes in vivo were well studied. Nowadays, the CRISPR is ongoing, hoping I can get knockout ES cell line soon.

I also did CRISPR knockout of Tcf21 gene in the mk3 cell line, trying to identify Tcf21 target genes as we also have the Tcf21 Chip-Seq data. So far, I got a Tcf21 knockout mk3 cell line which has 227bp deletion of the genomic DNA."

Q: You were recently in a secondment in Nice (iBV), how was it useful to you?
A: "The Secondment in Nice was very wonderful, both in the research and life aspects. I spent 2 weeks in Prof. Andreas Schedl's lab, mainly learning the technic "Generation of kidney organoid from mouse Embryonic stem cells" and how to culture the Nephron Progenitor cells for a longer period. Dr. Fariba Jian Motamedi is a very nice supervisor, who guided me to do the experiments step by step. We have inspiring discussions about the project. The last day of my Secondment, we spent almost the full day to take the immunoflosence pictures of the kidney organoids and luckily we got beautiful mosaic pictures. It was very helpful for my project, as I need to do the generation experiment of kidney organoids from CRISPR-mutant mouse embryonic stem cells in the future. It was a fulfilling life of the 2 weeks in Nice, not only research time but also free time. I had went hiking and swum at the seaside together with my friend Vladimir after working hours. It was so good an experience that I expect to visit next time."

Gunjan Pandey – ESR 12 – University of Heidelberg/Acquifer

Q: You spent time working in Finland previous to being enrolled as RENALTRACT ESR, was that decisive for you to pursue in a European training programme?
A: "I studied nano-science, majoring in molecular biology, during my masters program in Finland. While increasing my knowledge on broad spectrum of advanced biological sciences, I also cultivated skills on practical experimentation and application of sciences. RENALTRACT project was extremely attractive on multiple levels.I noticed I would be able to maximize utilization of my acquired skill set while capitalizing on an amazing opportunity to gain extensive knowledge in the grappling field of kidney development. I have always found myself driven towards interdisciplinary research which exploits the positive aspects of different fields and enriches the project with effective solutions. All these factors motivated me to be a part of the RENALTRACT and quite to my belief I find myself amidst wonderful research project with limitless exploration possibilities."

Q: How is your project moving forward?

A: "We have seen gradual progression in the positive direction on this project. Given complexity of subject matter and paucity of meaningful older publications, we are paving way on an uncharted pathway in this research project. One can summarize the workflow as: encountering the problem, brainstorming, executing the hypothetical solution, redrafting the initial formulation until you break the loop of exploration. Though challenging the work on on this project is extremely rewarding. Working on fascinating aspect of comprehending kidney on zebrafish animal model makes all of it stimulating and an enjoyable experience."