

Prof. Kian Koh at the Stem Cell Institute of KU Leuven is looking for a candidate for

## **New PhD Position in Stem Cell and Developmental Epigenetics.**

Embryonic cells in the earliest stages of development can generate the entire fetal body, a feature commonly known as pluripotency. In mammals, this process involves dynamic changes in the way methyl groups are erased or added at specific positions in DNA. Changes in DNA methylation regulate gene expression and phenotype without altering the DNA sequence, constituting an important part of “epigenetics” research.

The TET DNA dioxygenases erase DNA methylation by reiterative oxidation of 5-methylcytosine via 5-hydroxymethylcytosine, a discovery in 2009 that has reshaped dogma in epigenetics. As co-discoverer of the TET family, Prof. Kian Koh at KU Leuven studies the regulation of TET in pluripotency and early embryonic differentiation. Recent work by the group has opened new lines of investigation of TET1’s interesting roles in both embryonic and extra-embryonic lineages of the early post-implantation mouse embryo:

[www.news-medical.net/news/20170518/KU-Leuven-researchers-identify-vital-role-of-TET1-protein-in-earliest-stages-of-embryonic-development.aspx](http://www.news-medical.net/news/20170518/KU-Leuven-researchers-identify-vital-role-of-TET1-protein-in-earliest-stages-of-embryonic-development.aspx).

### **Project**

Using transgenic mouse strains generated in the laboratory, a PhD project is available to investigate how lineage-specific functions of TET1 contribute to proper embryonic development, in the context of congenital birth defects resulting from TET1 deficiency. Research work using mice will be complemented with *in vitro* studies using stem cell cultures, to understand how gene expression can be controlled by TET1 in possibly different ways in different cell lineages. Ultimately, the studies will provide important information of how proper regulation of DNA methylation in early development can tip the balance between health and disease later in life.

Selected Publications:

\* Khoueiry R, Sohni A, Thienpont B, Luo XL, Vande Velde J, Bartocetti M, Boeck B, Zwijsen A, Rao A, Lambrechts D, **Koh KP** (2017). Lineage-specific functions of TET1 in the post-implantation mouse embryo. *Nature Genetics* 49, 1061-1072.

\* **Koh KP**, Yabuuchi A, Rao S, Huang Y, Cunniff K, Nardone J, Laiho A, Tahiliani M, Sommer CA, Mostoslavsky G, Lahesmaa R, Orkin SH, Rodig SJ, Daley GQ, Rao A (2011). Tet1 and Tet2 regulate 5-hydroxymethylcytosine production and cell lineage specification in mouse embryonic stem cells. *Cell Stem Cell* 8, 200-213.

### **Profile**

- You have a Bachelor Honors or Master’s degree in molecular and cellular biology, biochemistry or a related biomedical field with excellent grades.
- You have good command of written and spoken English and are motivated to read and write manuscripts and research proposals.
- You have a passion for science and can thrive in an ambitious and highly interdisciplinary environment.

### **Offer**

You will be paid salary and benefits based on KU Leuven employment guidelines. Scholarship is available for 4 years upon satisfactory evaluation during the first year. International candidates are encouraged to obtain scholarships from their home countries.

### **Application**

For more information, please contact Christina Vochten ([christina.vochten@kuleuven.be](mailto:christina.vochten@kuleuven.be)). You may apply for his position by email to [kian.koh@kuleuven.be](mailto:kian.koh@kuleuven.be).

The application file must include:

- Cover letter containing statement of motivation
- CV (summarizing education, positions and academic work, scientific publications if any)
- Copies of educational certificates and grades
- Name and contact details of 1-2 referees.

**KU Leuven** seeks to foster an environment where all talents can flourish, regardless of gender, age, cultural background, nationality or impairments. Located near Brussels, the heart of Europe, the university is consistently ranked as among the most innovative in Europe:

<https://nieuws.kuleuven.be/en/content/2017/ku-leuven-once-again-tops-reuters-ranking-of-europes-most-innovative-universities>.