



Naoya YAHAGI

Faculty of Medicine

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Theme

- Nutrigenomics, Diabetes and Endocrinology
- Laboratory Medicine

Keyword nutrition, genome, transcription, in vivo imaging, diabetes, aging

Highlight

Major Scientific Interests of the Group

The scope of our group is to elucidate how nutritional signals regulate gene expression and adapt individuals to their nutritional environment, using original methods to directly analyze the interaction between nutritional signals and the genome in animal bodies.

Projects for Regular Students in Doctoral or Master's Programs

- 1) Identify a transcription factor complex bridging nutritional signals and the genome
- 2) Find key enhancers controlling nutrient flows using CRISPR-Cas9 genome editing and CRISPRi techniques

Other Faculty Members

Professor, Yasushi Kawakami

Lecturer, Kazumasa Isobe

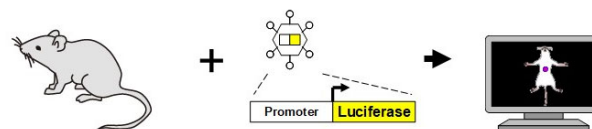
Lecturer, Takayasu Kato

Assistant Professor, Tomoko Machino

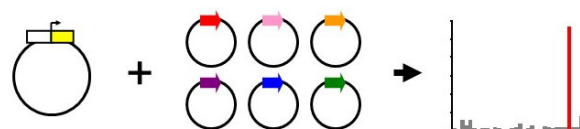
Assistant Professor, Yoshinori Takeuchi

Assistant Professor, Yuichi Aita

“in vivo Ad-luc” analytical system



“TFEL scan” genome-wide TFs screen



Applications and Prospects

- Figure out how the genome is read to control nutrient flows, why foods can make us both healthy and sick, and how fasting and time-restricted feeding extends our lifespan. Finally establish the royal road to health and well-being.
- Be a builder.

Literature, intellectual property, work

1. Yahagi N, Takeuchi Y. Genome-wide screening of upstream transcription factors using an expression library. *F1000Research* 10:51, 2021.
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3. Shono A, Kondo M, Hoshi S, Okubo R, Yahagi N. Cost-effectiveness of a new opportunistic screening strategy for walk-in fingertip HbA1c testing at community pharmacies in Japan. *Diabetes Care* 41:1218-1226, 2018.
4. Piao X, Yahagi N, Takeuchi Y, Aita Y, et al. A candidate functional SNP rs7074440 in TCF7L2 alters gene expression through C-FOS in hepatocytes. *FEBS Lett* 592:422-433, 2018.
5. Takeuchi Y, Yahagi N, Aita Y, et al. KLF15 enables rapid switching between lipogenesis and gluconeogenesis during fasting. *Cell Rep* 16:2373-86, 2016.