



JSPS

JSPS-Crick Symposium on Gut Circuits, 11th June 2019

Yuuki Obata Ph.D. (HFSP Research Fellow), The Francis Crick Institute



yuuki.obata@crick.ac.uk

The gastrointestinal (GI) tract is a densely innervated organ that also contains the largest number of immune cells in the body. Remarkably, the gut lumen contains a complex microbial community known as gut microbiota. Therefore, gut tissue constitutes a unique environment where microbes, neurons and immune cells are closely interacting within the same organ. Recent compelling evidence has raised a new and exciting concept namely that *intestinal homeostasis is coordinated by tissue circuits of the microbiota-neuro-immune axis*. However, the molecular and cellular mechanisms underlying such tissue circuitry remain largely unexplored due to the limited integration of the largely independent fields of microbiology, neuroscience and immunology into a one interdisciplinary research area.

On 11th of June 2019, the JSPS-Crick Symposium on Gut Circuits was held at the Francis Crick institute in London. This symposium aimed to provide an opportunity for immunologists, neuroscientists and gut microbiologists to exchange their knowledges and expertise, and to develop cross-disciplinary research projects for understanding of intestinal health and diseases. More than 100 scientists from UK-based institutes took part in this event, discussed the latest advances in intestinal physiology, and shared an interest on the “*Gut Circuits*”, which is the integrated and balanced interactions between diverse cellular components within the gut tissue.

My previous research experience in Japan and current activities in the UK allowed me to organise UK-Japan bilateral symposium at the international place. I invited nine speakers who have recently made critical contributions to the intestinal research. Each speaker gave a talk about different components of the gut circuits (**Figure 1**). Among them are three mucosal immunologists from Japan whose travel expenses were supported by JSPS London Symposium/Seminar Scheme 2019. Of note, the keynote lecture given by Dr. Gérard Eberl (Pasteur Institute, Paris) was

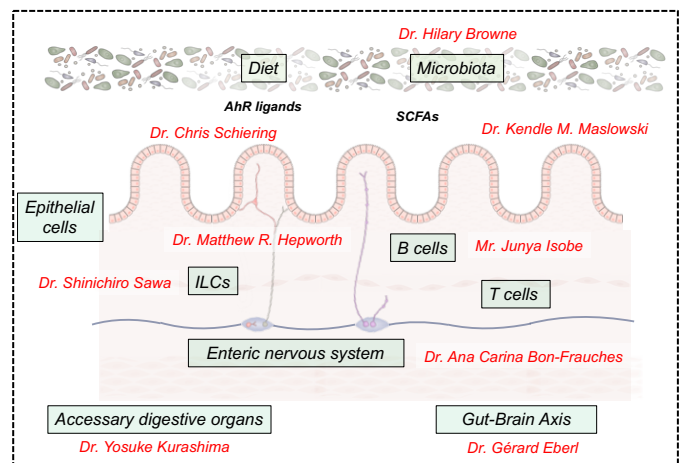
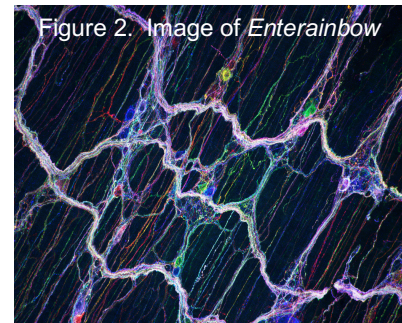


Figure 1. The speaker's topics on the “Gut Circuits”

jointly held with weekly interactive seminar series called “Crick Interest Group Talks” at the main auditorium. In addition to scientific talks, Ms. Asami Matsumura from JSPS London explained about the international activities of JSPS and the funding opportunities for UK-based scientists. The programme including the entire list of speakers and titles is available [Here](#).

As a part of my “Art-Science” collaboration activity, we host art works by artist and scientist Dr. Jasmine Pradissitto ([website](#)). This exhibition included the sculptures made of recycled plastics and light, ‘Plastic Planet’ and some of her works were inspired from the enteric neurons labelled with multiple fluorescent proteins called *Enterainbow* (**Figure 2**).



As a follow-up activity, I am planning to apply for JSPS research funding such as *KAKENHI* in order to start UK-Japan collaborative projects based on what we discussed during this meeting, such as the neuro-immune interactions in the gut. Also, I already discussed with some attendees the next international Gut Circuits meeting, which is going to be held in 2021.

Finally, I would like to thank everyone who contributed to this event, particularly JSPS London (Dr. Nobuo Ueno and Ms. Chika Itoi), Co-organiser (Mr. Álvaro Castaño), Crick event coordinator (Dr. Faye Bowker), Crick illustrator & graphic designer (Mr. Matt Butt) and my supervisor and adviser in the Crick, Dr. Vassilis Pachnis and Dr. Brigitta Stockinger.



Presentations at the seminar room (**left**) and the main auditorium (**right**) of the Francis Crick institute.



Dinner with speakers from Japan and Keynote speaker after the symposium.

Left to Right: Mr. Junya Isobe (Keio University, Japan), Dr. Yuuki Obata (The Francis Crick institute, Organiser), Dr. Gérard Eberl (Pasteur institute, Paris, Keynote speaker), Mr. Álvaro Castaño (The Francis Crick institute, co-organiser), Dr. Yosuke Kurashima (Chiba University, Japan) and Dr. Shinichiro Sawa (Kyusyu University, Japan)