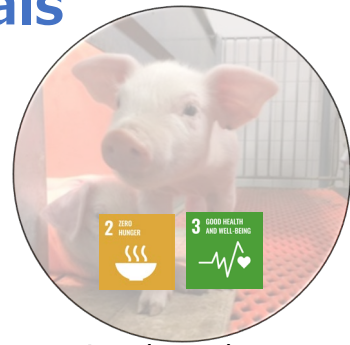


# Making humans and animals healthier through gastrointestinal tracts



Applied Biosciences

Ryo Inoue, Professor  
(Division of Applied Biosciences)

E-mail ryo.inoue@setsunan.ac.jp

**Key words** Gut microbiota, Mucosal Immunity, Functional Foods (Probiotics, Prebiotics), Pig, Xenotransplantation

## Summary

### Backgrounds

- The gastrointestinal tract plays a crucial role in physiological functions of animals such as the digestion/absorption of nutrients and immunity, among others. .
- The malfunctioning of the gastrointestinal tract can cause not only gastrointestinal disorders, but also systemic diseases of the brain and metabolism..

### Purpose

- My research group investigates the functions and processes of the gastrointestinal tracts of humans and animals by analyzing their gut microbiotas and mucosal immunity. .

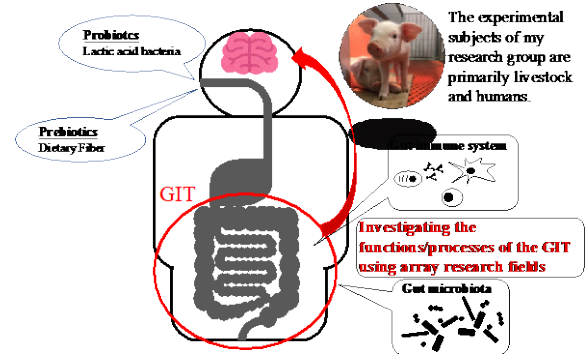
### Major achievements

- In the gut microbiota research, we are collaborating with many researchers including medical doctors and veterinarians.
- The experimental subjects of my research group are not only humans but also livestock, especially pigs.
- Uncovering many newly functions of probiotics and prebiotics in humans and animals.

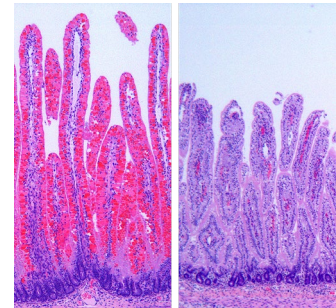
## Prospects of collaboration

**【Collaboration with agriculture, fisheries, livestock, and food industries】** We have already made collaborations with more than 10 companies and having good relationship for more than 5 years with most of companies.

**【Collaboration with Medicine, Pharmacology, Nursing, and Engineering】** Keeping in mind to feedback the achievements of research to industries smoothly.



Gastrointestinal tract not only for digestion/absorption of nutrition



Colostrum (left) can promote development of gut structures in new-born piglets (comparison to formula milk; right)

Original Article

**Dietary supplementation with partially hydrolyzed guar gum helps improve constipation and gut dysbiosis symptoms and behavior in mice**

Ryo Inoue,<sup>1\*</sup> Yuko Chihara,<sup>2</sup> Sawaki, Kazu

<sup>1</sup>Laboratory of Animal Science, Department of Applied Biological Sciences, Faculty of Agriculture, Setsunan University, Nagatsubo-cho 48-1, Hirakata, Osaka 573-0201, Japan; <sup>2</sup>Horikawa Municipal Hospital, Department of Molecular

microorganisms

MDPI

**Altered Fecal Microbiotas and Organic Acid Concentrations Indicate Possible Gut Dysbiosis in University Rugby Players: An Observational Study**

So Morishima<sup>1</sup>, Naoko Oda<sup>2</sup>, Hiromi Ikeda<sup>1</sup>, Tomohiro Segawa<sup>1</sup>, Machi Oda<sup>1</sup>, Takamitsu Tsukahara<sup>4,5</sup>, Yasuharu Kawase<sup>7</sup>, Tomohisa Takagi<sup>1,6</sup>, Yuji Naito<sup>4,5</sup>, Mami Fujibayashi<sup>1</sup> and Ryo Inoue<sup>1,\*</sup>

<sup>1</sup>Laboratory of Animal Science, Department of Applied Biological Sciences, Faculty of Agriculture, Setsunan University, Nagatsubo-cho 48-1, Hirakata, Osaka 573-0201, Japan; <sup>2</sup>so\_morishima@abos.jp (S.M.); <sup>3</sup>ryo.inoue@setsunan.ac.jp (R.I.); <sup>4</sup>naoko.oda@fda.etsu-naga.ac.jp (N.O.); <sup>5</sup>hiromi.ikeda@abos.jp (H.I.); <sup>6</sup>tomohisa.takagi@abos.jp (T.T.); <sup>7</sup>yasuharu.kawase@abos.jp (Y.K.)

Uncovering role of gut microbiota in health and diseases



## Selling point

**Aiming to contribute to a healthy life in humans and animals by seeking information on how to make the gastrointestinal tract “healthy”**