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ABSTRACT SUBMISSION – DEADLINE 10 May 2013

Title (up to 30 words, Arial, 11 pt, single line spaced, in sentence case. Like this:	<u>Gut microflora and health</u>
Authors (Underline the presenting author)	<u>R. Nagatomi</u>
Department, Institution, Country	<u>Tohoku University Graduate School of Biomedical Engineering</u>
Address Corresponding Author	<u>Seiry-cho 2-1, Aoba-ku, Sendai 980-8575, Japan</u>
Select Your Abstract Session Theme Category	<u>4. Exercise prescriptions for a healthy gut</u>
Preferred Presentation Form	<input type="checkbox"/> Oral communication Note final decisions on format of presentation will be by the ISEI Scientific Committee
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Gut microflora and health

NAGATOMI, R

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ABSTRACT

Human gastrointestinal tract harbors a diverse population of microorganisms, the gut microbiota, the largest microbial community associated with human body, comprised of trillions of bacterial cells of over 1000 species. Although gut lumen is an extension of the external world for our organs and tissues, the interaction between human body and gut microbiota is highly mutual and reciprocal as if it is one of the internal organs. In animal experiments and human observational studies, gut microflora and its composition have been demonstrated to have significant roles in body fat accumulation, and consequently, insulin resistance and obesity. The metabolic activity of gut microbiota such as processing of non-digestive food components and the resulting metabolites are suggested to contribute to the regulation of energy storage. Low grade inflammation possibly elicited through recognition of bacterial components by gut associated immune system is considered as another factor contributing to the development of obesity and atherosclerosis. Based on the observations of the contribution of gut microbiota to human health, practical approaches to modify or improve gut microbial composition has been a center of interest in the field of health promotion for decades. Modification of dietary habit, administration of pre- and probiotics as well as regular exercise are suggested to potentially modify gut microbial components. The biggest issue, however, is that we still don't have an established or agreed method of characterizing composition of gut microorganisms, lacking the mechanistic link between the composition of microorganisms and the anticipated effect. This is largely due to its high diversity among species, human races and individuals. Recent advances in system biological approach, such as metabolomics and metagenomics may find a thread through the cosmic world of microbiome in our body.

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