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An improvement of the human gut ecosystem by drinking Refined-Deep-Sea Water (RDSW)

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World trends relating to healthy human life focus on a balanced intake of foods and beverages with safety. These products promoted without any support of verification may not only have no effect, but also sometimes be harmful to health. From a medical standpoint, we focus on good effect of the Refined-Deep-Sea Water (RDSW) produced from deep-seawater collected in Muroto offshore (Japan), a mineral-rich healthy drinking water for humans. We previously reported that drinking RDSW can improve human conditions well in the various fields such as hemorheology, allergy, immunology and microbiology (anti-*Helicobacter pylori* activity). We performed clinical study to investigate the functions of these effects on human body in two groups (Group 1: RDSW and Group 2: controlled water (mineral water) generally taken by people in Japan). The stool and urine obtained from the participants were subjected to research facilities and the data were comparative analyzed between two groups. Regarding the stool analysis, the production of short-chain fatty acids such as acetic acid, propionic acid, isobutyric acid, butyric acid, 3-methylbutanoic acid, valeric acid, etc., was significantly increased in Group 1 than Group 2. Furthermore, isoflavones in the urine such as daidzein, genistein and equol were obviously increased in Group 1 compared with Group 2. The equol is produced from daidzein with the restricted strains of Enterobacteriaceae in intestinal microflora. Taken together, these indicated that drinking RDSW improves the human gut ecosystem with intestinal microflora-implications for health. We believe the promising potential that the RDSW is applied in not only health promotion/maintenance but also medical field as adjunctive therapy in the near future. The clinical study is approved by Ethics Committee of Kochi University.

Recent Publications

- 1. Kimata H and Tai H (2001) Reduction of allergic skin responses and serum allergen-specific IgE and IgE-inducing cytokines by drinking deep-sea water in patients with allergic Rhinitis. Otorhinolaryngol Nova 11:302-303.
- 2. Kimata H, Tai H, Nakagawa K, Yokoyama Y, Nakajima H and Ikegami Y (2002) Improvement of skin symptoms and mineral imbalance by drinking deep sea water in patients with atopic eczema/dermatitis syndrome (AEDS). Acta Medica 45:83-84.
- 3. Hataguchi Y, Tai H, Nakajima H and Kimata H (2005) Drinking deep-sea water restores mineral imbalance in atopic eczema/dermatitis syndrome. Eur J Clin Nutr 59:1093-1096.
- 4. Kawada M, Takeuchi H, Con S A, Yamamoto E, Yasukawa T, Nakagawa K, Ikegami Y and Sugiura T (2012) Antibacterial activity of refined deep seawater on Helicobacter pylori. J Medical Microbiol Diagnosis, S1-7.
- 5. Takeuchi H, Trang V T, Morimoto N, Nishida Y, Matsumura Y and Sugiura T (2014) Natural products and food components with anti-Helicobacter pylori activities. World J. Gastroenterology, 20:8971-8978.

Biography

Hiroaki Takeuchi has expertise in education, research and practices in Kochi Medical School, Department of Medical Laboratory Medicine. He is familiar with Microbiology as well as infectious diseases. Recently he focuses on search, evaluation and application of functional foods and beverages including new ingredients for health promotion/maintenance and medical treatment as adjunctive therapy.

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