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## Thermal adaptation of yamame (*Oncorhynchus masou*) in normal condition after undergoing heat stress

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Understanding the mechanism of temperature adaptation is crucial for cold-freshwater fish in order to cope with the recent global warming, especially yamame (*Oncorhynchus masou*), which is an important aquaculture species belonging to the family Salmonidae. The aim of this study is to understand the adaptive response of high-temperature tolerant yamame in normal condition after heat stress. For that, a group of yamame was developed through selective breeding to have high temperature tolerance. Next, we performed a higher-temperature-tolerant test and divided into HT (for the high-temperature-tolerant) group and NT (for the non-high-temperature-tolerant) group. A week later, RNAs were extracted from the gill tissues and analyzed by examining the mRNA expression profiles using Illumina HiSeq 4000 Sequencing System. A total of 2,893 differentially expressed genes (DEGs) from the gill were identified by comparing the HT and the NT groups, then functional analysis were performed to identify associated gene ontology (GO) terms and Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway. Several differential biological pathways were detected and we found that the HT showed higher associated gene expression in ECM-receptor interaction, in cell adhesion molecules (CAMs), in cell junction and in adhesion pathway comparing to the gill tissue in NT. Those genes are related to the reparation of the damaged tissues and to the generation of the cytoskeleton of individuals. On this basic, we concluded that the HT may adapt quicker than the NT in normal condition after undergoing the heat stress. These findings can be used to develop high-temperature-tolerant yamame and other Salmonidae.

## Biography

Waraporn Kraitavin is a PhD. student in Aquatic Molecular Biology and Biotechnology at the University of Tokyo, Japan. She worked as a Nutritionist at Cargill Meats (Thailand) Limited for 1 and a half years and she has completed her Master's degree and Bachelor's degree from Kasetsart University, Thailand.

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