



Laboratory  
of

# Microbiology

Graduate School of Nutritional and Environmental Sciences  
Department of Food and Nutritional Sciences

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Developing new probiotic and  
functional foods

## Research into health-promoting probiotics and health-damaging bacterial pathogens of foodborne and tickborne origin

Microbes are found in tremendous numbers everywhere in nature. Among these, there are microbes that are good for human health, and those that are bad for it. In our laboratory, we focus on lactic acid bacteria that are good for human health, and on bacterial pathogens of foodborne and tickborne origin causing emerging infectious diseases that are bad for human health.

### Research area 1

Characterization of lactic acid bacteria isolated from plant-fermented foods, especially Japanese pickles, to develop new probiotic and functional foods

### Research area 2

Molecular characterization and epidemiology of antibiotic-resistant bacteria, especially expanded  $\beta$ -lactamase-producing *Escherichia coli* isolated from farm animals and meat products (foodborne infectious disease)

### Research area 3

Molecular epidemiology of bacterial pathogens, especially obligatory intracellular parasites transmitted by ticks, and the analysis of the mechanisms of such bacteria by proteomics and cDNA microarray

### Special research for the “Global COE Program,” University of Shizuoka

“Global Center of Excellence for Innovation of Human Health Sciences: Innovative Approaches to the Synergy between Food and Drugs”

(Research field 3)

Identification of stress biomarker candidates useful for the evaluation of functional foods