

Division of Natural System	Research field	Human Physiology	Lab. ID
			NS10
Laboratory web site	http://exercisephysiol.com		
Research subjects			
<p><MASUDA, Kazumi> Our research includes study metabolic regulation in normal, trained and untrained tissues in vivo. Recently, we also use cell culture system to determine a specific protein-protein interaction that would affect muscle mitochondrial respiration and bioenergetics. Also we put forces on the regulation of mitochondrial biogenesis induced by exercise and natural nutrients. Our current research focuses on 1) developing of detection technique to monitor/map tissue oxygenation and metabolite levels in vivo, and investigation of the cellular response to limiting oxygen and the control of oxidative phosphorylation in skeletal muscle and myocardium, 2) determining the structure and function of proteins, especially heme protein family such as myoglobin, hemoglobin and neuroglobin in the cell, 3) assess the effect of exercise and nutrition aid on cellular oxidative stress and cell function, 4) investigation the regulation of mitochondrial biogenesis by exercise and nutrients, and 5) developing training methods to improve athlete's physical conditioning. etc. More information will be referred to our publications.</p> <p><TERASAWA, Naoko> We study the ingredients of functional food and the mechanism of bioregulatory.</p> <p><KITAURA, Takashi> We are interested in the biochemical changes of striated muscle including skeletal and cardiac muscles in exercise and sports. Particularly our main research themes are the analysis of muscle hypertrophy and metabolic adaptation with exercise or doping.</p> <p><YOSHIKAWA, Hiroaki> Our interest is the pathophysiology and therapy of autoimmune disorders, especially autoimmune neurological disorders. We focus on Myasthenia Gravis and related disorders, as well as autoimmune neurological disorders of central nervous systems.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p><MASUDA, Kazumi> We will accept students for PhD program course. First of all, the PhD students have to discuss and decide his/her research theme, and choose technique/technology which is necessary to be involved in the theme. The supervisor and collaborator will teach and follow the students for the research activity. We have a research meeting (so-called Lab-meeting) every week, then the student will be asked to report his/her current data and progress, and present a recent relevant publications. Besides, the PhD students can attend the scientific meeting then present own data.</p> <p><TERASAWA, Naoko> We accept applicants for Doctor course. Our laboratory is managed by a weekly lab-meeting which must be attended by staffs and DC students, where all policies for research are discussed.</p> <p><KITAURA, Takashi> We accept applicants for a doctor's course. We will discuss about your research themes and advise you for research activity. We will have regular research meetings and journal clubs. We recommend you to join the seminars and some annual domestic and foreign meetings.</p> <p><YOSHIKAWA, Hiroaki> We accept applicants for a doctor's course. An academic advisor and teaching staffs of the Department of Neurology and Neurobiology of Aging are going to guide studies. Academic staffs are willing to discuss about the research themes and advise you for research works. We have regular research meetings, journal clubs. You are welcome to our department's seminars and casual parties.</p>			
Daily life in the laboratory, etc.			
<p><MASUDA, Kazumi> Our laboratory is located in the north area of Kakuma Campus. We have facilities and equipments to cover the human experiment and animal experiment as well as cell culturing. It is of course important for us to concentrate our research activity in daily life, but it is also necessary to keep the well-network with the researchers who work in outside of Kanazawa. In addition, we have an experience to accept an overseas student (He will receive PhD in Sep. 2015).</p> <p><TERASAWA, Naoko> Our laboratory is located in the North Area of Kakuma Campus, Human and Social Science Hall 3.</p> <p><KITAURA, Takashi> My laboratory of the Exercise Biochemistry is located on the General education Hall, Kakuma Campus. I will retire on coming Mar., 2018. If you are going to learn a lot of research techniques and information of human muscles, you are able to touch me soon. After passing entrance examination, you will learn some important techniques and you are able to transfer to one of my collaborating laboratories.</p>			

<YOSHIKAWA, Hiroaki> Our laboratory of the Department of Neurology and Neurobiology of Aging is located on the Takaramachi Campus. You are going to have your desk and receive experimental guidance from teaching staffs and laboratory technicians. The condition of our laboratory is in good status.

Message or comments by the laboratory faculty staffs

<MASUDA, Kazumi> In our laboratory, we discuss about each reasech theme frequently and give/receive ideas each other. Also the collaborator can help and give us ideas on our resech work when we face difficulies. Therefore..., do not think too much, and do not hesitate to ask us..., you never walk alone toward your PhD.

<TERASAWA, Naoko> Welcome the students who wish to go to Doctoral program course.

<KITAURA, Takashi> The motto of my laboratory is "The challenge". It is goal to foster a strong researcher of independent mind to be active at home and abroad. Let's talk frankly and discuss about interesting problems of science in English.

<YOSHIKAWA, Hiroaki> The motto of our laboratory is "Let's get along!". We work together with researchers in other laboratories. We wish your good human relationships.

Recent Master theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2013.3	Interaction of myoglobin with mitochondrial respiration in skeletal muscle during rat development

Recent Doctoral theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2015.9	Curcumin Treatment Regulated Mitochondrial Biogenesis by Increasing Cyclic Adenosine Monophosphate(cAMP)Level in Rat Skeletal Muscle
2015.3	The role of myoglobin for the mitochondrial respiration in skeletal muscle
2015.3	The mechanism of mitochondrial biogenesis induced by fatty acids in skeletal muscles
2012.3	Involvement of OCTN2 in regulation of carnitine uptake into skeletal muscle during contraction
2011.3	The change in intracellular partial pressure of oxygen equilibrated with myoglobin oxygen saturation during muscle contraction and its physiological relevance to mitochondrial respiration

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