

Graduate School of East-West Medical Science

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Graduate school of East-West Medical Science was established in 1999, as an educational system to produce creative researchers in the field of 'East-West Medical Science,' which combines knowledge of oriental medicine and western medicine.

Its establishment was a part of the university's long-term strategic program, 'Kyung Hee University's (KHU) future in the new millennium: Vision 2000,' which indicated "oriental medicine" as a specialized future research area of KHU. And the establishing process of GSM was accelerated by its participation in the first stage of Brain Korea 21 Project (BK21) granted by Korean Ministry of Education and Human Resource for 6 years from 1999 to 2005.

Degree Requirements

Degrees offered by GSM are M.S. and Ph.D. in the fields of Oriental medicine, Medicine, Medical science, Medical nutrition.

Departments (major)	Degrees (M.S. / Ph.D.)	
East-West Medicine	Oriental Medicine, Medicine	
East-West Medical Science	(Medical Science)	Medical Science
	(Oriental Medical Science)	Oriental Medicine
Medical Nutrition	Medical Nutrition	

Completion of the following is required prior to achievement of degrees.

- The minimum credits required for graduation in each department are 24 and 36 units for M.S. and Ph.D. degrees, respectively.
- Qualifying examinations are held in 3 and 4 common courses for M.S. and Ph.D. degree, respectively.
- Pass foreign language examination.
- Complete form of thesis approved by 3 and 5 committee members for M.S. and Ph.D. degree, respectively.
- At least one submission and publication in National (KRF) and SCI Journal for M.S. and Ph.D. degrees, respectively.

Courses

Common Courses

Analytical Biochemistry, Biochemistry, Cell Biology, Current Theory of Acupuncture & Meridian, Immuno-Histochemistry, Medical Statistics, Molecular Biology, Natural Products Chemistry, Neuroscience, Oriental Medical Theory, Research Methods for New Medicine, East-West Integrated Medical Science Research

Dept. of East-West Medicine

East-West Medical Research Methodology, The Newest Western Medicine, Practice of Integrated Medicine, Comparison of Eastern and Western Medicine, General Theory of Eastern Medicine, Psychosomatic Medicine, Statistics in Health Science, Clinical Nutrition, Common Statistical Methods for Clinical Research, Integrated Research of Eastern and Western Medical Science, Analytical Biochemistry, Biochemistry, Cell Biology, Current Theory of Acupuncture &

Meridian, Immunohistochemistry, Medical Statistics, Molecular Biology, Natural Products Chemistry, Neuroscience, Oriental Medical Theory, Research Methods for New Medicine, General Herbal Pharmacology, Medical Entomology, Chinese Herbal Pharmacology, Evaluation of Herbal Medicine, Lecture of Drugs for Relieving Exterior and Excreting Dampness, Herbal Toxicology, Immuno-pharmacology, Meridian Theory, Mechanism of Acupuncture Therapy, Herbal Acupuncture Therapy, Theory of Electroacupuncture, Methodology of the Study of Meridian, Neuromagnetics, Meridian System, Neurobiology, Neurophysiology, Neuropharmacology, Neuro-Biochemistry, Bio-Chemistry in Neuropharmacology, Brain Disease Research, Neuroanatomy, Neurophysiology of CNS, Cognitive & Behavioral Neuroscience, Current Topic in Life Science, General Concept of Cancer Biology, Cancer Metastasis, Angiogenesis of Tumor, Anticancer Herbology, Oriental Etiology and Pathology, Anticancer Chemotherapy, Methodological Study of Cancer

[Dept. of East-West Medical Science \(Medical Science\)](#)

Biochemistry, Molecular Biology, Pharmacology, Cell Biology, Advanced Biochemistry, Natural Products Chemistry, Cellular and Molecular Immunology, Pharmacognosy, Immunohistochemistry, Human Physiology, Neurophysiology, Current Topics in Life Science, Special Topics I-IV, Biological and Chemical Methodology, Molecular and Cellular Methodology, Animal Imaging, Metabolism and Endocrinology, Seminar I-II, Scientific Writing

[Dept. of East-West Medical Science \(Oriental Medical Science\)](#)

Foundations of Neuroscience, Special Lecture of Anatomy & Physiology, Seminar on Current Topics of Brain Research, Foundations of Brain Disease Research, Research of Ischemic Brain Diseases, Research of Degenerative Brain Diseases, Brain Diseases in Oriental Medicine, Medicinal Herbs for Brain Diseases, Neuropharmacology, Special Lectures of Neuroanatomy, Clinical Anatomy, Special Lectures of Neuroscience, Molecular Neuroscience, Methodology of Neuroscience, Cognitive and Behavioral Neuroscience, Seminar of Oriental Biomedical Science, Clinical Application of Oriental Biomedical Science, Neuroscience of Pain, Autonomic Nervous System, Neuroendocrinology, Research Methods on Oriental Biomedical Science

[Dept. of Medical Nutrition](#)

Nutrient Function and Metabolism, Medical Nutrition Therapy, Current Topics in Nutrition, Nutrition Physiology, Nutrition Biochemistry, East-West Medical Nutrition, Supervised Practice I, II, III, IV, Biochemistry Laboratory, Cancer and Nutrition, Nutritional Support and Practice, Functional Foods and Nutrition, Nutrition and Immunology, etc.

Faculty

Jae-Hwan Lew, M.D., Ph.D. Kyung Hee University, 1999, Professor, Internal Medicine (Intensive Care Medicine), intmed@khu.ac.kr

Se-Hyun Kim, Ph.D. University Hawaii, 1996, Associate Professor, Biostatistics, mucc@khu.ac.kr

Sung-Ho Maeng, M.D., Ph.D. Seoul National University, 2001, Assistant Professor, Pharmacology, jethrot@khu.ac.kr

Chul-Hun Kang, Ph.D. Iowa State University, 1995, Associate Professor, Biochemistry, kangch@khu.ac.kr

Sun-Yeou Kim, Ph.D. Seoul National University, 1996, Professor, Pharmacognosy, sunnykim@khu.ac.kr

Eun-Joo Hwang, Ph.D. The Ohio State University, 1997, Professor, Molecular Cell Biology, ehwang@khu.ac.kr

Ji-Ho Park, Ph.D. Leeds University, 1994, Associate Professor, Neurophysiology, jihopark@khu.ac.kr

Joung-Woo Hong, Ph.D. The Ohio State University, 2004, Assistant Professor, Molecular Biology and Biochemistry, jwhong46@khu.ac.kr

Tae-Woo Kim, Ph.D. Seoul National University, 2001, Assistant Professor, Organic Chemistry, tw1275@gmail.com

Nak-Won Sohn, O.M.D., Ph.D. Kyung Hee University, 1990, Professor, Neuroanatomy, sohnw@khu.ac.kr

Hee Kang, O.M.D., Ph.D. Kyung Hee University, 2005, Assistant Professor, Oriental Pathology, suyoungirl@hanmail.net

Ryo-Won Choue, Ph.D. University of Illinois, 1993, Professor, Nutrition, rwcho@khu.ac.kr

Yun-Hi Cho, Ph.D. UC Davis, 1994, Professor, Nutritional Biochemistry, choyunhi@khu.ac.kr

Yu-Kyung Park, Ph.D. University of Illinois at Urbana Champaign, 1999, Associate Professor, Human Nutrition, ypark@khu.ac.kr

Jeong-Min Lee, Ph.D. University of Arizona at Tucson, 1999, Assistant Professor, Nutrition and Immunology, jlee2007@khu.ac.kr

Dong-Hyung Cho, Ph.D. Gwang Ju Institute of Science and Technology, 2005, Assistant Professor, dhcho@khu.ac.kr

Laboratories

■ Laboratory of Herbal Pharmacology

URL: <http://web.kyunghee.ac.kr/~herbal/snkim/snframe.htm>

Director: Professor, Sun-Yeou Kim (sunnykim@khu.ac.kr)

Research Overview

Pharmacognosy (chemistry and biology of natural products) is the study of bioactive natural products found in plants, animals and microbes. Natural Products have recently become an important source of small molecule chemical entities that regulate various disease-related molecular targets. Our research group is actively involved in the isolation, structure assignment using NMR and MASS, and screening and selection of natural products with activity against skin related diseases (skin photoaging and hyperpigmentation, skin photoinflammation), neurological disorders and diabetic complications.

■ Laboratory of Proteomics

URL: <http://web.kyunghee.ac.kr/~neuron/faculty/kch.html>

Director: Professor, Chul-Hun Kang (kangch@khu.ac.kr)

Research Overview

In most of the biological processes including pathology of many diseases, alteration of expressed protein levels is involved, and identification of the proteins with altered expression is important to understand the processes. Proteomic approaches are certainly a promising technology pursuing this issue. The aim of 'Laboratory of Proteomics' is to develop proteomic technology and to discover disease-related proteins thereby.

The current research topics in the lab include:

- Development of large scale proteomic platform based on 2-D gel electrophoresis
- Characterization of proteins involved in response to low oxygen stress
- and lipid-induced hepatic damages

■ Laboratory of Physiology

URL: <http://web.kyunghee.ac.kr/~neuron/faculty/pjh.html>

Director: Professor, Ji-Ho Park (jihopark@khu.ac.kr)

Research Overview

With the integrative view on animal function and mechanism, physiology has a strange approach philosophy to understand the phenomenon. In our lab, we will try to investigate the fundamental functional study of neural interaction using multielectrode array, long term live calcium imaging and electrical ion channel recording. Moreover, a practical approach to screen bioactive material is also adapted using above methods.

Specific research topics including:

- Neuronal modulation study during learn and memory
- Functional analysis of herbal drugs and development of alternative drugs using electrophysiological techniques
- Neural interaction study using organotypic culture and multielectrode array (MEA) system

■ Laboratory of Cell Biology

Director: Professor, Eun-Joo Hwang (ehwang@khu.ac.kr)

Glial cells, astroglia and microglia, play crucial roles in the development, differentiation and survival of neurons in the brain. Glial cells become activated in response to brain injury, a process termed "reactive gliosis." Microglia play an important role in immune surveillance in the brain. During reactive gliosis, microglia secrete neurotoxic substances, which kill neurons and have been proposed to be the major causes of diverse neuropathologies. Major areas of research include molecular mechanisms of glial activation, glia-mediated neurotoxicity, and exploration of novel anti-inflammatory compounds for neuroprotection.

■ Laboratory of Molecular Biology

Director: Professor, Joung-Woo Hong (jwhong46@khu.ac.kr)

Molecular Biology laboratory studies transcription regulation mediated by cis-acting elements in the early embryo of *Drosophila melanogaster*. Particular efforts focus on the organization of cis-regulatory elements to respond to morphogen gradient, the enhancer-promoter communication, and the transcriptional control of metastasis of malignant tumor.

■ Laboratory of Chemical Biology

Director: Professor, Tae-Woo Kim (tw1275@gmail.com)

Research Overview

Nucleic acid chemistry-Oriented Methodology Development: The integrated technology of Apto-precipitation & Proteome mass analysis

Aptamer, target-specific nucleic acid ligand is selected by SELEX (Systematic Evolution of Ligands by Exponential Enrichment) in vitro. It is believed that aptamer can overcome some disadvantages of the present antibody-based methodology. The integrated technology into which the aptamer-based pull-down and the mass spectrometry-based proteome analysis converge will provide an extremely useful tool for the proteomics and glycomics research.

Glycomics: Cancer Diagnostic Application of Glycoisoform

Glycosylation modulates the activity, turnover, interaction of most proteins. Thus glycoisoform diagnostics is considered to be the best indicators of the type and severity of many diseases including cancer. The relationship between glycosylation and cancer is investigated by using the aptamer-mass spec. fusion technology. The cancer-specific glycan can be applied for therapeutic and diagnostic purposes.

- Development of aptamer-Mass spec. fusion technology
- Development of glycan specific aptamer
- Study on the relationship between PTMs (post-translational modifications), protein isoforms, and cancer

■ Laboratory of Neuroscience & Oriental Medical Science

URL: <http://web.khu.ac.kr/~neuron>

Director: Professor, Nak-Won Sohn (sohnnw@khu.ac.kr)

Research Overview

This laboratory is interested in the integrative research of neuroscience and oriental medical science for ischemic & degenerative brain diseases. The research models used in this laboratory is the histo-pathological in vivo animal studies including MCAO, ICH, spinal cord injury, etc.

Specific research topics include:

- Study on neuroprotective effects of herbal medicines on brain diseases
- Study on pharmacological effects of herbal medicines on brain metabolism and cerebral blood flow
- Study on immunological effects of herbal medicines

■ Laboratory of Medical Nutrition

Research Overview

The department of medical nutrition proposed medical nutrition therapy (MNT) by combining nutritional science with oriental medicine and medical sciences. Research focus of the faculty members are application of MNT in clinical settings, mechanism of antioxidant nutrients in vitro and in vivo, dietary efficacy in human and animal model, nutritional mechanism of skin disease, development of functional foods for enhancing immune status, and so on.

The department of medical nutrition has been carrying out the coordinated program (CP) in dietetics since March of 2004. The program includes didactic education and supervised practice experiences complying with the guidelines of the Korean Dietetic Association and the American Dietetic Association. In November 2008, the CP program was granted substantial equivalency from ADA.