

I ❤️ KMU



KAOHSIUNG
MEDICAL
UNIVERSITY

www.kmu.edu.tw

Innovation | Legislation | Knowledge | Mission | Universality |



Creating New Education Programs and Promoting Health Equality

Kaohsiung Medical University (KMU) sits in the heart of Kaohsiung, a world-class industrial port city with the population of 2.8 million residents, which makes it the second largest city in Taiwan. KMU, established in 1954, is the first private medical college in Taiwan. It consists of seven colleges and is the only school that provides the post baccalaureate program in medicine in Taiwan. KMU is also currently running Dual-Degree programs with the Faculty of Pharmacy, Upsalla University, Sweden, the University of Szeged, Hungary and a dual PH.D program with University of California, Irvine.

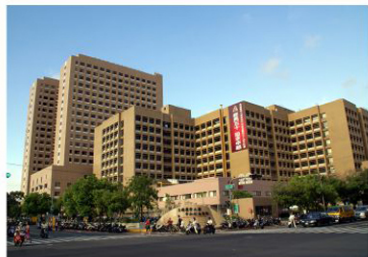
Among all the medical universities in Taiwan, KMU is the only university that was honored as a model for teaching excellence in 2013 by Taiwan Ministry of Education (MoE) and all departments have been accredited by Higher Education Evaluation & Accreditation Council of Taiwan



(HEEACT). Currently, KMU has 8 important research centers:

- (1)Center of Excellence for Environmental Medicine.
- (2)Center for Infectious Disease and Cancer Research,
- (3)Research Center for Natural Product and New Drug,
- (4)Orthopaedic Research Center, (5)Center for Biomarkers

and Biotech Drugs, (6)Center for Stem Cell Research, (7)Research Center for Nonlinear Analysis and Optimization, (8)Research Center for Lipid and Glucose Medicine. KMU also has distinguished performance in the following six fields: clinical medicine, pharmacology and toxicology, agricultural sciences, social sciences, chemistry, and botany and zoology, which are ranked among top 1% of



universities in the world. Furthermore, KMU has allocated abundant resources to the cooperation between industry and university; as a result, MoE has acknowledged her as one of the top private universities with excellent achievements in both academia-industry cooperation and intellectual property in 2009 and 2011.

KMU has 3 affiliated teaching hospitals with 2,634 beds in total. Our medical professional teams provide the public with comprehensive care. Chung-Ho Memorial Hospital, the medical center and the oldest first-class teaching hospital established in 1979, along with the other two regional hospitals, has been providing medical trainees with

integrated trainings over the last few decades. In order to increase resources, Kaohsiung Medical University has established a long-term collaboration with National Sun Yat-sen University through "The Aim for the Top University Alliance" project. This cooperation integrates the diverse resources of two prominent universities, not only enhancing KMU's teaching and research but also turning the two universities into a combined think tank for Kaohsiung city.

Since the founding of KMU, 26 National Awards for Outstanding Contributions to Medical Services laureates were KMU alumni. The academic staffs of its global health program have trained many medical experts and clinical professionals in developing countries around the world, including Solomon Islands, St. Lucia, Haiti, Guatemala and Gambia. With our relentless efforts over the past 60 years, KMU family continues the faith in educating health professionals, providing comprehensive medical care to the public and eliminating health disparities.

FEATURES

- ◆ 1st private medical university in Taiwan (est. 1954).
- ◆ One of the only 2 universities with all departments / institutes recognized by HEEACT¹.
- ◆ Grant from MoE² for Teaching Excellence since 2007.
- ◆ Award from MoE for High Distinction in Character Education in 2010.
- ◆ 2nd best among all Taiwan's universities for Evaluation of the University Students' Right in 2011.
- ◆ A WHO-recognized International Safe School in 2012.
 1. HEEACT: Higher Education Evaluation & Accreditation Council of Taiwan
 2. MoE: Ministry of Education, Taiwan

Appraisal by Professional Societies

- College of Medicine was accredited by TMAC in 2004, 2007, 2010, and 2013
- College of Nursing was accredited by TNAC in 2008
- Department of "Medicinal and Applied Chemistry" was accredited by the MoE, Taiwan in 2004

- Department of Occupational Therapy was certified by WFOT (World Federation of Occupational Therapists) since 1995

International/Overseas Chinese Students

- Started enrolling overseas Chinese students in 1959
- Recruiting international students since 1999
- Currently 340⁺ international/Overseas Chinese students from 20⁺ countries

Dual PhD Degree Programs

- KMU & University of Szeged, Hungary
- KMU & Uppsala University, Sweden
- KMU & UC Irvine, USA

Overseas Clinical Clerkship Rotation

- Harvard University, USA • University of Hawaii, USA
- Seoul National University, Korea
- Juntendo University, Japan

International Volunteer Service

- Solomon Islands • Swaziland • Malawi
- North India • South India

Research

- 6 categories of KMU approved by ESI are :
 1. Pharmacology and Toxicology (World ranking: 118th)
 2. Clinical Medicine (World ranking: 287th)
 3. Chemistry (World ranking 648th)
 4. Plant & Animal Science (World ranking: 896th)
 5. Social Sciences, General (World ranking: 517th)
 6. Agricultural Sciences (World ranking: 462th)
- Ranking in Research Papers and Cited Frequency
Kaohsiung Medical University

Year	Papers	Papers Ranking	Cited Frequency	Cited Frequency Ranking
2009	4,061	731	26,080	1,030
2010	4,462	692	31,890	963
2011	5,000	660	38,442	894
2012	5,695	627	43,366	839
2013	6,564	606	53,916	809

• Kaohsiung Journal of Medical Sciences

- One of the only four SCI journals in Taiwan
- The only one SCI journal issued by a university instead of an association
- 2008-2009 : SCIE
- 2010 : SCI (expected IF : 0.5)
- 2011 : SCI (IF : 0.476)



INTRODUCTION

College of Medicine was newly established on August 1, 1999. Currently, it comprises twelve outstanding units with teaching, research and service functions, i.e., School of Medicine, School of Post-Baccalaureate Medicine, Department of Sports Medicine, Department of Respiratory Therapy, Department of Renal Care, Institute of Medicine, Institute of Clinical Medicine, Master's Program in Biochemistry, Master's Program in Physiology, Master's Program in Neurology, Master's Program in Genome Medicine, Master's Program in Pharmacology.

FUTURE GOALS

We continuously update our instruction to keep pace with the changing medical environment, and cultivate physicians who are both skilled and principled by strengthening courses in general education, medical literature and humanities, and medical ethics. Important new biomedical knowledge will be integrated into our courses and applied to the practice of clinical medicine. We will establish a

faculty development center to refine our instructors' teaching skills and improve instructional quality. PBL and OSCE instruction will be strengthened to enhance students' communication skills and basic clinical abilities. We will strengthen interdisciplinary courses and research integration to promote the continued growth of our instructors and physicians. Cooperating with domestic and foreign medical education institutions and hosting medical conferences will enhance our international reputation and improve the quality of instruction, research, and medical care.

FOCUSES OF DEVELOPMENT

Local Concerns~ Sound holistic education will produce highly-trained medical and sports medicine personnel who share common principles, which are widely knowledgeable, highly skilled, good at communication, and mindful of medical ethics.

Serving Society~ We will improve the quality of health care and participate in the planning and implementation of



enhancing the quality of our medical service and biomedical research while will also strive to apply new biomedical knowledge to clinical practice and raise the general standard of public health by encouraging the national **Global Outlook**~ We see exchange and cooperation with domestic and foreign medical centers as a means of enhancing our international reputation and improving the quality of our teaching, research, medicine, and service.

Outstanding~ National colleges of medicine will serve as friendly critics and models. We will strive to exceed international standards in key areas and to transform ourselves into one of the most respected medical centers in the Asia-Pacific region.

DEPARTMENTS & PROGRAMS

• Undergraduate Programs

- School of Medicine
- School of Post-Baccalaureate Medicine
- Department of Sports Medicine
- Department of Respiratory Therapy
- Department of Renal Care

• Master's Programs

- Graduate Institute of Medicine
- Institute of Clinical Medicine
- Department of Biochemistry
- Department of Physiology
- Department of Pharmacology
- Department of Neurology
- Department of Genome Medicine
- Department of Sports Medicine

• Ph.D. Programs

- Graduate Institute of Medicine
- Institute of Clinical Medicine
- PhD Program in Translational Medicine
- PhD Program in Environmental and Occupational Medicine



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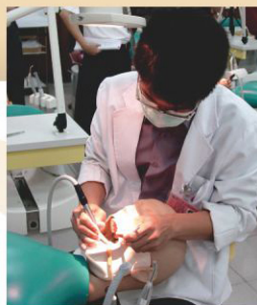
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INTRODUCTION

Kaohsiung Medical University was established in 1954, the very first private medical college in Taiwan. Three years later, in 1957, we established the first private dental school in Taiwan within our university. To date, the School of Dentistry is over half a century old for 52 years. In 1985, we established the very first MS program in Dentistry in our country, followed by setting up a Ph.D. degree program in 1990, the first such program in Dentistry in Taiwan. In 1992, we further established the first Graduate Institute for Oral Health Science (GIOS); providing the concrete basis for promoting dental public health. In order to offer further clinical-basic science training for dentists on a continuing bases, the On-the-Job MS program was founded within the graduate institute of dental and oral health sciences in 1999. This program has a special feature focusing on Periodontal Prosthodontics training for the practicing dentists and it is currently the only one of its kind in Taiwan.



With the refinement of the university's organization and mandates, we evolved into a full-sized College of Dental Medicine by 1999, providing our country's very first and foremost college-level professional education in all aspects of basic and clinical dental sciences, which is consisted of the School of Dentistry and a separate Department of Oral Hygiene. Our School of Dentistry runs four different programs: the undergraduate program for DDS training, the M.S. program and the Ph.D. program for graduate training and the On-the-Job MS program for the established dentists. In parallel, the Department of Oral Hygiene also has four programs: the undergraduate program, the On-the-Job undergraduate program, the M.S. program and the on-the Job M.S. program.

MAJOR FIELDS OF RESEARCH

1. Microbiology and Immunology in Periodontology
2. Oral oncology
3. Biomaterials and Dental biomechanics
4. Occlusion
5. Dental Implantology
6. Laser Dentistry
7. Craniofacial growth
8. Epidemiology of Oral Diseases
9. Bioengineering
10. Medical and Molecular Biology
11. Academic-industrial Collaboration

PROGRAMS

School of Dentistry

1. Undergraduate Program
2. Graduate Programs (M.S. Program & Ph.D. Program)

Department of Oral Hygiene

1. Undergraduate Program
2. Graduate Program



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INTRODUCTION

The College of Pharmacy was expanded from the school of Pharmacy and established in August 1, 1999. The College currently consists of the School of Pharmacy (with undergraduate department, M.S., In-service M.S., and Ph.D. programs), the Department of Fragrance and Cosmetic (with undergraduate department and M.S. program), the Graduate Institute of Natural Products (with M.S. and Ph.D. programs), and the Graduate Institute of Clinical Pharmacy (with M.S. program).

The history of this College can date back to 1957, when the School of Pharmacy was set up. It is also the first private school of pharmacy ever built in Taiwan. Thereafter, the M.S., Ph. D. and In-service M.S. programs at the Graduate Institute of Pharmacy were gradually developed in 1982, 1988, and 1999, respectively. In 2007, a successful integration between undergraduate department and graduate institute formed the current framework of the School of Pharmacy.

In 1992, the first Graduate Institute of Natural Products in Taiwan was established. Starting from the M.S. program, the Graduate Institute soon developed into the Ph.D. program in 2001. Subsequently, the Department of Fragrance and Cosmetic was set up in 2003 and the M.S. program in 2007. At about the same time, the Graduate Institute of Clinical Pharmacy came into existence in 2004, and then a global structure of the College was born.

The faculty members in the College of Pharmacy possess comprehensive expertise in various pharmacy areas, including fragrance and cosmetics, pharmaceutical sciences, research and development of natural products, clinical pharmacy and pharmaceutical care.

DEPARTMENTS

School of Pharmacy

- | | |
|-------------------------------|--------------------|
| 1.Undergraduate Program | 2.Master's Program |
| 3.On-the-Job Master's Program | 4.Ph.D. Program |



Department of Fragrance and Cosmetic Science

1. Undergraduate Program 2. Master's Program

Graduate Institute of Natural Products

1. Master's Program 2. Ph.D. Program

Graduate Institute of Clinical Pharmacy

1. Master's Program



Contact Information

1. School of Pharmacy

Undergraduate Program / Master's Program

On-the-Job Master's Program : PhD Program

<http://pharm.kmu.edu.tw/front/bin/ptlist.phtml?Category=1>

Director : Dr. Shou-Mei Wu

Phone: 886-7-3121101 Ext:2164 E-mail: shmewu@kmu.edu.tw

2. Department of Fragrance and Cosmetic Science

Undergraduate Program / Master's Program

<http://cosmetics.kmu.edu.tw/front/bin/cglist.phtml?Category=36>

Director : Dr. Wang Moo-Chin

Phone: 886-7-3121101 Ext:2366 E-mail: mcwang@kmu.edu.tw

3. Graduate Institute of Natural Products

Master's Program / PhD Program

<http://www.kmu.edu.tw/~nphs/GINP-E/index.html>

Director : Dr. Fang-Rong Chang

Phone: 886-7-3121101 Ext:2162 E-mail: aaronfrc@kmu.edu.tw

4. Graduate Institute of Clinical Pharmacy

http://www.kmu.edu.tw/~clinpharm/index_en.htm

Director : Dr. Yaw-Bin Huang

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INTRODUCTION

The current College of Nursing began in 1968 with a 3-year Associate Program in Nursing, followed by the creation of the School of Nursing in 1975. Our Master's Program in Nursing began in 1991, and the College itself was formed in 1999. Our Doctoral Program in Nursing and Graduate Institute of Gender Studies were established in 2001. From 2007, we began integrating both the Master's Program and Doctoral Program in Nursing into the School of Nursing. And from fall 2012, with the establishment of the College of Liberal Arts and Social Science, Graduate Institute of Gender Studies was moved from the College and merged into the newly inaugurated one. A glimpse of the College's historical timeline is as follows.

08/1968 3-year Associate Program

08/1975 School of Nursing (4 years)

08/1990 Post-RN Baccalaureate Program (3 years)

08/1991 Master's Program in Nursing

08/1993 Night School of Nursing, B.S. Program (5 years)

08/1994 Night School of Nursing, B.S. Program (3 years)

08/1997 Transforming the Night School of 5-year BS Program to 3-year Post-RN BS Program

01/2000 Promoting the School of Nursing to College of Nursing

08/2001 Doctoral Program in Nursing and Master's Program in Gender Studies

08/2005 Closing Down the 3-year Post-RN BS Program

08/2007 Integrating Both Master's and Doctoral Programs into the School of Nursing

08/2012 Graduate Institute of Gender Studies Moved to College of Liberal Arts and Social Science



ACADEMIC PROGRAMS

- Undergraduate Program in Nursing
- Master's Program in Nursing
- Doctoral Program in Nursing

MINIMUM INEQUIREMENT FOR GRRADUATION

- Undergraduate Program in Nursing:
Completion of 128 semester-hours of course work with an average grade of 60. Of these 128 hours, 87 must be required nursing courses, and 41 must be general education and/or electives in nursing.
- Master's Program in Nursing:
Completion of 32 semester-hours of course work with an

DEGREES CONFERRED

- BSN- Bachelor of Science in Nursing
- MSN- Master of Science in Nursing
- PhD- Doctor of Philosophy in Nursing



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DEAN'S WELCOME AND INTRODUCTION

Welcome to the College of Health Sciences at Kaohsiung Medical University. The College was established in 1999 with a mission to educate truly outstanding health care professionals and to develop high-quality integrated, interdisciplinary research. We have 68 fulltime faculty members to support approximately 1,500 graduate and undergraduate students in our academic programs. As with other Colleges at KMU, we strive for excellence in teaching, research and service.

The College encompasses six allied health and health care management professions, including physical therapy, occupational therapy, medical laboratory science and biotechnology, medical imaging and radiological sciences, public health, healthcare administration and medical informatics. Classroom, clinical, and laboratory instruction is provided by a highly qualified and dedicated faculty using innovative teaching strategies in facilities that house state of the art equipment.

The graduates of our professional programs perform better than most of their national counterparts on the licensure/board examinations. We are also proud of the fact that our faculty provide significant leadership and participate in local and international contexts, such as chairing committees and associations, editing journals, and influencing policies.

Our college is an exciting place to pursue an education and career. We are building on our proud heritage to ensure that the College of Health Sciences remains at the forefront of health profession education. I invite you to browse through our department web pages to learn more about the exciting opportunities in the College.

FOCUSES OF DEVELOPMENT

1. Training of Professional Medical Service Manpower

We will answer society's urgent need for better medical quality by strengthening the formative training of medical service personnel in the fields of medical technology and

biotechnology, biomedical imaging and radiological sciences, physical therapy, occupational therapy, and psychological counseling, diagnosis, and treatment.

2. Training of Professional Health Service System Manpower

To benefit citizens and affect a highly efficient health care and insurance system, we are strengthening training for healthcare professionals in our departments of Public Health and Medical Information Management, as well as in the Graduate Institute of Health Care Administration.

3. Promotion of in-Service Education and Training

We have responded to society's widespread need for professional knowledge by offering extension classes in biostatistics and in-service classes in medical service management. We are ready to meet the need for continuing education in the age of knowledge.

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DEPARTMENTS

- Department of Medical Imaging and Radiological Sciences
- Department of Healthcare Administration and Medical Informatics
- Department of Medical Laboratory Science and Biotechnology
- Department of Occupational Therapy
- Department of Physical Therapy
- Department of Public Health



INTRODUCTION

The College originally consisted of the School of Chemistry and Biology, which were considered to be traditional natural science departments and thus detach from our medical science program of the University. Life science has entered a new era in the understanding and control of living processes in today's genomic age. The restoration and regeneration of the environment, the transformation of industrial processes, and the utilization and processing of biological information which results ground-broken in the treatment of disease. Therefore, School of Chemistry was renamed the "Faculty of Medicinal and Applied Chemistry" on August 1, 2003. The school is actively acquiring state-of-the-art technology needed for enhancing R&D of drug and biomedical material. Meanwhile, the School of Biology has been re-designated to "Faculty of Biomedical Science and Environmental Biology", integrating the theoretical framework of biology with the application of modern biotechnology. In addition, the College also found "Faculty

of Biotechnology" on August 1, 2003. The goal of this Faculty is to transform research breakthroughs in molecular biology and medical science into biotechnological applications. Since 2008, the Faculties were renamed as Departments because of the organization expansion.

FOCUSES OF DEVELOPMENT

1. In addition to encouraging interaction between instructors faculties and students in the College's Departments and Graduate Institutes, including informal interaction and joint research projects. We are also vigorously promoting academic exchange with other universities and research organizations, and greater industrial cooperation as well. We hope that the outstanding results of research projects can be realized as technological applications fostering the development of our domestic biotech industry.
2. We promoted the integration of research interest of individual laboratory creating new programs in pharmaceutical technology, biomedicine, and biotechnology. Undergraduate



students can join to obtain thorough training in their areas of interest, thereby ensuring a source of potential graduate students.

3. The Department of Biotechnology will focus on genetic information, protein engineering, and molecular pharmacology during its initial phase. This department plans to educate more personnel possessing a sound grasp of theory and practice, thereby enabling the country to consolidate its biotech industry.

DEPARTMENTS

- Department of Medicinal and Applied Chemistry
- Department of Biomedical Science and Environmental Biology
- Department of Biotechnology

KMTU

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INTRODUCTION

The College was founded on the 1st of August 2012 and integrates the Department of Psychology and the Department of Medical Sociology and Social Work that were once subordinate to the College of Health Science, with the Graduate Institute of Gender Studies that was once under the College of Nursing. In addition, Physical Education Division and Language Education Division that were previously subordinate to the Centre for General Education have been expanded into the Centre for Physical Education and the Centre for Language and Culture respectively. The previous Division of Humanities and Social Sciences and that of Nature and Applied Science have been expanded into the Centre for Humanities and Arts Education as well as the Centre for Fundamental Science Education. Also all of the teaching fellows are allocated into each centre in terms of their expertise. The college of Humanities and Social Sciences not only recruits outstanding academics, but also aims to establish teaching-oriented centers in about five to ten years, such as the Centre for Medical Humanities, Medical Laws, Medical Ethics and Medical Anthropology. The undergraduate study is both theory and practice-based. It is also crossing disciplinary boundaries. The postgraduate study aims to train the next generation of professionals in the

field of Healthcare and Medical Industry, such as Psychology, Applied Sociology and Social Work. Moreover, the College aims to establish the Master and PhD programs, as well as welcomes postgraduates studying cross-field research. You will be working with outstanding academics and specialists in their fields at KMU. Another feature is the College integrates teaching with research. Also, it endeavors to cultivate the spirit of the humanities and social care.

VISION

1. To educate people who participate in the healthcare and medical industry, being familiar with theory and practice, and knowing interdisciplinary vision in Psychology, Applied Sociology and Social Work.
2. To be the leading international centre for research on the healthcare and medical field.
3. To be the planner, advocator, and executors who cultivate the spirit of the humanities and the knowledge of society for KMU studies.

The College is different from the College of Humanities and Social Sciences in other comprehensive universities in the sense of the human-healthcare-oriented research and the teaching-based development. Also, it promotes the humanities and society education, and puts an emphasis on the research into

medical humanities, medical ethics, medical anthropology, health society and medical psychology. KMU students majoring in the Department of Public Health are expected to not only develop the knowledge of health and medical treatments, but also the spirit of the humanities. KMU graduates are likely to have more knowledge and experiences related to health and medical treatments than others from other universities. Our postgraduate program emphasizes the human and social issues about health and medical treatments.

FOCUSES OF DEVELOPMENT

- 1.To foster the already established teaching, research and services of psychology, applied sociology and social work in the healthcare and medical field.
- 2.To help the College of Medicine, the College of Dental Medicine, the College of Nursing and the College of Health Sciences to cultivate the humanistic values of students belonging to the healthcare and medical field; this includes the design of courses, the allocations of teachers, the enhancement of teaching approaches, the plan of experienced learning and the like.
- 3.To build up collaboration with internal and external colleges, working together on the teaching and research on medical humanities, medical education, medical laws and medical anthropology.
- 4.The Center for Language and Culture as well as the Center for Humanities and Arts Education will be responsible for the English and Chinese education for KMU students, enhancing their literary, historical, philosophical and art knowledge.
- 5.The Center for Physical Education will cooperate with the College of Humanities and Social Sciences to cultivate students, including holding competitions to improve students' physical figure and nature their exercise habit. It will also help to foster students' teamwork skills and cooperative spirit.
- 6.The Centre for Fundamental Science Education places an emphasis on math, physics and information sciences, and their relevant applications. It also aims to collaborate with colleagues in other leading international organizations.

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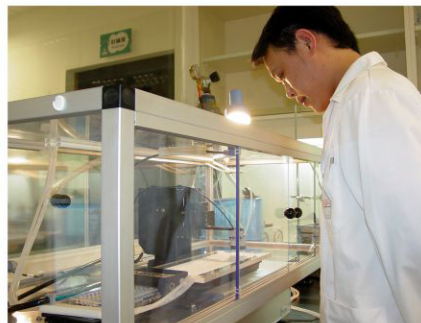


SPECIALTIES

Center for Infectious Disease and Cancer Research (CICAR) is led by Prof. Yi-Ming Arthur Chen, who is the vice president of Kaohsiung Medical University. CICAR is an institute committed to comprehensively study infectious diseases related to cancer. The research of CICAR focuses on virus and bacteria-related infectious diseases, such as AIDS and hepatitis, and their association with cancer etiology. Cohort study and molecular epidemiologic methods are widely conducted to study mechanisms of pathogenesis, signal transduction pathways, molecular mechanisms of metabolic syndrome. CICAR is also dedicated to identify novel cancer biomarkers and to develop rapid diagnostic reagents, vaccine, and targeted therapy.

- Virus database collection and HIV isolation from patient specimens.
- Development of virus detecting methods by using of monoclonal antibodies.
- Cooperation with international organizations
- As a personnel training center in virus research.

- Development of novel cancer biomarkers and detection platform.
- Development of high-throughput drug screening platform to discover novel anti-cancer drugs.



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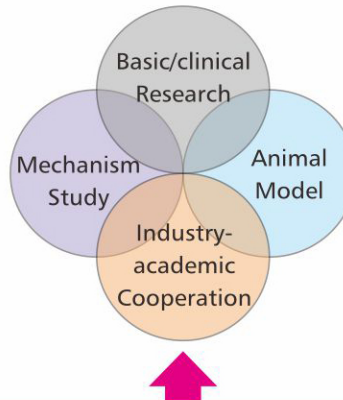
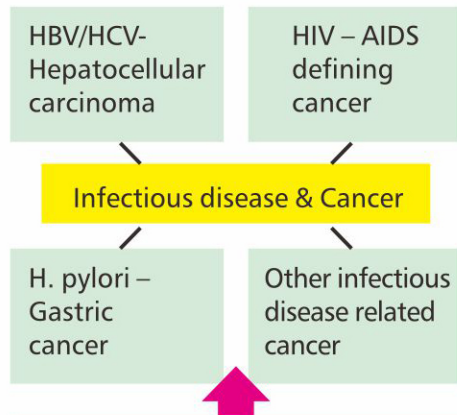
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Center for Infectious Disease and Cancer Research (CICAR)

Research priorities



Technology platform

1. High-throughput drug screening
2. Biomarker discovery
3. Monoclonal antibodies production
4. Virus phylogenetic analysis
5. Diagnosis and drug resistance detection of HIV
6. Mouse models
7. Zebrafish model

Organization of CICAR:

- Division of academic collaboration : Implementation of research grants and publications
- Division of administrative management : Administrative management 、 Intellectual property rights applications
- Division of performance assessment : Evaluation of operating performance 、 academic research and personnel training 、 achievement promotion 。

- ## Contact Information

<http://envmed.kmu.edu.tw/>



SPECIALTIES

1. Establish the extract bank of the indigenous plants from Taiwan for new drug discovery
2. Establish the extract bank of the resourceful plants from Solomon Island for new drug discovery
3. Drug discovery of bacterial E. coli β -glucuronidase inhibitor, anti-virus, and anti-cancer from Taiwan and Solomon Island of indigenous plants
4. Drug discovery of bacterial E. coli β -glucuronidase inhibitor, anti-virus, and anti-cancer from synthetic compounds with small molecules
5. Establish the platforms for drug screening
6. Cooperation and communication with foreign research institutes

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1. RESEARCH AREAS:

Study of mechanisms, preventions and therapies of bone and cartilage regenerative medicine, osteoarthritis (OA), osteoporosis (OP), and osteonecrosis (ON), including

- (1) Develop drug for OA treatment and promote to industrial and/or clinical application.
- (2) Develop biomaterials in application of regenerative medicine for bone and cartilage.
- (3) Develop carriers for growth factors or drugs with bone substitute and promote to industrial and/or clinical application.
- (4) Study of stem cell applications in regenerative medicine and drug activity evaluation.
- (5) Study the genetic molecular mechanisms for drugs in osteogenic cells (osteoblasts and stem cells) and chondrocytes.
- (6) Drug development for treatment of bone and articular joint diseases.
- (7) Study of stem cell treatments in bone and articular joint diseases.
- (8) Study of physical therapy in prevention or treatment of muscle, nerve, bone and joint disease.

2. ESTABLISHED RESEARCH AND TECHNOLOGY PLATFORM

Based on conducting several long-term integrated research projects. The Campus Collaboration Platform of multi-disciplinary and integration studies of Clinical Medicine and Basic Medical Science have been established.

- (1) Disease oriented Study Platforms: osteonecrosis (ON), osteoporosis (OP), bone fracture, cartilage damage, osteoarthritis (OA).
- (2) Technology Platforms: development of control-release drug carrier, in vitro testing platform for cytotoxicity and function (stem cells, chondrocyte, osteocyte), animal study platforms (osteoarthritis, bone defect, cartilage defect), orthopaedic imaging and mechanics analysis platform.

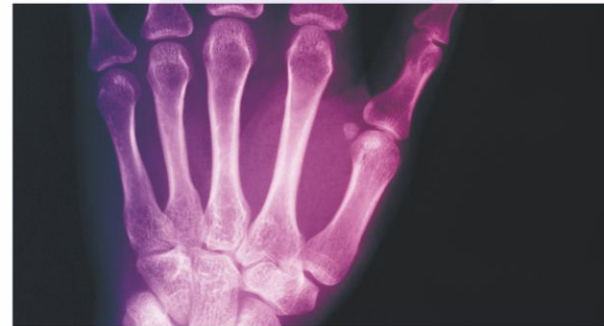
3. POTENTIAL OF INDUSTRY-ACADEMY COOPERATION AND TRANSLATIONAL MEDICINE

- (1) ORC team have been executing the Technology Development Program for Academia of Ministry of Economic Affairs

(MOEA) for 3 terms and successfully built up the product R&D mechanisms including industry-academy cooperation, intellectual property right application, technology transfer, etc. The experiences would furthermore strengthen the energy of translational medicine.

- (2) The target products of our development meet the goal of our national institutes, such as Si2C (Supra Integration and Incubation Center), STSPB (Southern Taiwan Science Park Bureau, Ministry of Science and Technology), as well as MIRDC (Metal Industries Research & Development Centre) have focused on the development of dental, orthopaedic and biomedical materials and equipments.
- (3) Institute for Biotechnology and Medicine Industry, Economic Development Bureau, Kaohsiung City Government and The Southern Taiwan Science Park (STSP), Kaohsiung Science Park have preferred the research center to be a bridge of orthopaedic and dental industry, simultaneously the technology cooperative partner of R&D.
- (4) Based on the existing cooperative enterprises, there is a

good opportunity for the center to develop more potential partners, and furthermore to strengthen the trend development of orthopaedic materials and drugs with the conduction of projects granted from Technology Development Program for Academia of MOEA, as well as STMDIC (Southern Taiwan Medical Device Industry Cluster).



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SPECIALTIES

It has been a great feature and extraordinary achievements in Biomarkers and biopharmaceuticals of our institute. By establishing BioBank and the long-term cooperation with Academia Sinica, and the BioSignature project and colorectal cancer center research team of our institution, we have become a leading research center of Biomarkers and Biotech drugs.

The unique of our institution is that we have integrated the research team to develop clinical DNA/mRNA biomarkers, clinical microRNA biomarkers and drugs, biopharmaceutical and protein marker. In the future, we will continue to collaborate with the interdisciplinary group and to nurture talent in medicine and various specialties in order to increase the international recognition of KMU.

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Center for Stem Cell Research (CSCR)

Centre for stem cell research (CSCR) is funded by Kaohsiung Medical University (KMU) to strengthen our stem cell research in KMU/KMUH and establish ourselves as a leader and a hub for researchers keen in stem cell research in Taiwan. We have brought together at least 18 teams within both KMU and KMUH to forge ahead.

Our overall aims are:

1. To understand the role of human stem cells and cancer stem cells in human diseases and cancers in the hope of improving diagnosis and treatment;
2. To harness the capacity of human stem and progenitor cells for repair and regeneration;
3. To exploit stem cells as tools for personalized medicine.

Our major research interests are:

1. human embryonic stem cells;
2. human adult stem cells;
3. human induced pluripotent stem cells (iPS cells);
4. human cancer stem cells;
5. human stem cell platform for therapeutic drug screening;

6. human stem cell platform for biomarkers and therapeutic nanoparticles development.

Our major networking activities are:

1. To bring together like-minded researchers for brainstorming and promoting multidisciplinary collaboration;
2. To set up regular regional and international academic meetings, workshops and symposiums to update our knowledge and broaden our research networks;
3. To converse and cooperate with biomedical industries to facilitate utilization of stem cell research.



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The mission of RCNAO is to advance interdisciplinary research, including

- 1.The topics in Nonlinear Analysis and Optimization
- 2.The applications of Nonlinear Analysis and Optimization techniques to the study of medical problems and the delivery of health care
- 3.Developing multiscale network bridging theory and building a mesoscopic neurocomputing platform
- 4.Developing structural dynamics of brain connectome and building a complex analysis platform of EEG signals and brain connectome
- 5.Design and application of micro-neurochips in detecting and generating characteristic EEG signals to control physical systems

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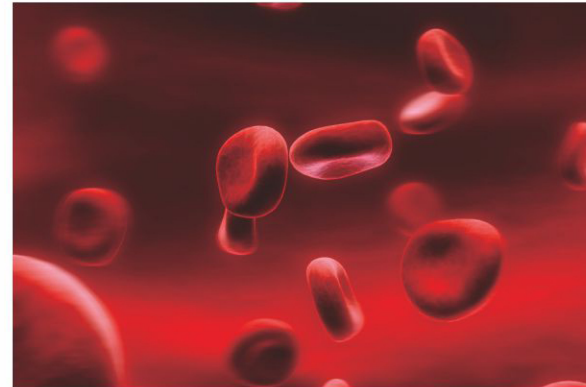
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Research Center for Lipid and Glucose Medicine (RCLGM)

SPECIALTIES

1. Innovative research on physiological and pathological roles of Lipid and Glucose in cardiovascular system and its treatments.
2. Innovative research on physiological and pathological roles of Lipid and Glucose in neurology disease and its treatments.
3. Innovative research on physiological and pathological roles of Lipid and Glucose in renal system and its treatments.
4. Innovative research on physiological and pathological roles of Lipid and Glucose in metabolic syndrome and its treatments.
5. Innovative research on physiological and pathological roles of Lipid and Glucose in hepatic system and its treatment.
6. Innovative research on physiological and pathological roles of Lipid and Glucose in systemic inflammation and immune system and its treatments.
7. Other innovation research on physiological and pathological roles of Lipid and Glucose and its treatments.
8. A Platform for the purification and its clinical application for electronegative lipoproteins.
9. A platform for translation research using studies on glycosylation.
10. A platform for translation research using experiments of insulin sensitivity.



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