INAUGURAL FMHS SCIENTIFIC MEETING 2017

DELIVERING VALUES TO THE ELDERS

DATE : 25 – 26 MAY, 2017

VENUE : KA BLOCK, UNIVERSITI TUNKU ABDUL RAHMAN, SUNGAI LONG CAMPUS, JALAN SUNGAI LONG, BANDAR SUNGAI LONG, CHERAS, 43000 KAJANG, SELANGOR D.E., MALAYSIA

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MESSAGE

Foreword Message by Dean, Faculty of Medicine and Health Sciences, UTAR

Dear friends and colleagues,

On behalf of the organising committee, it is my great pleasure to welcome you to the Inaugural FMHS Scientific Meeting 2017. For the first time after establishing the Faculty of Medicine & Health Sciences (FMHS) in November 2009, the Faculty brings together the four research centres and other research groups to hold this combined scientific meeting open to the public and a post conference workshop specially the postgraduate students to meet the expert researchers. The aim is to catch up with the latest development in medical and health sciences and provide a platform for intellectual exchange amongst researchers and practitioners. The theme of the meeting is "Delivering values to the elders" in view of the ageing population of Malaysia and strategic research direction of the Faculty. We hope that you will enjoy the meeting as well as your interaction with fellow researchers, industry partners, students and other health professionals, not forgetting our beautiful Sungai Long Campus of the Universiti Tunku Abdul Rahman in the south of Kuala Lumpur.

Emeritus Professor
Dr Cheong Soon Keng
Founding Dean of the FMHS and
Chairman of the Organising Committee

ORGANIZING COMMITTEE

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Emeritus Prof Dr Cheong Soon Keng

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Prof Dr Chin Kin Fah
Assoc Dr Yang Zao
Dr Ong Hooi Tin
Ms Liew Siew Fun
Mr Abid Hussain Bhat

PROGRAMME DETAILS

25 May 2017 (Thursday)

		Medical Sciences (LT 1)	Health Sciences (LT 2)
8.00 am		**Registration**	
8.30 am	**Symposium 1** **Chairperson**	**CARE OF ELDERY** *Professor Dr Yap Sook Fan* *Emeritus Professor Dr. Boo Nem Yun* *@ Mooi Nam Ying*	**NEW IDEAS IN TRADITIONAL CHINESE MEDICINE** Dr Te Kian Keong Mr Choy Wai Chong
	8.30 – 9.00	**Perspectives of Aging across Cultures and Ages** *Professor Dr Yap Sook Fan* *Universiti Tunku Abdul Rahman*	**Developing Human Resource Capabilities For The Traditional And Complementary Healthcare System** *Dr Goh Cheng Soon* *Ministry of Health Malaysia*
	9.00 – 9.30	**Geriatric – Clinical Perspective** *Associate Professor Dr Tan Maw Pin* *Universiti Malaya*	**Anti-Dengue Activity Of Traditional Chinese Medicinal Plants** *Ms Maryam Umar, Universiti Putra Malaysia*
	9.30 – 10.00	**Care Of Elderly – Global Perspective** *Associate Professor Dr Noran Naqiah bt Mohd Hairi* *Universiti Malaya*	**The Role of gynecology of Traditional Chinese Medicine for peri-menopause and post-menopause** *Puan Susuana Kuek Binti Kamal Kuek*
10.00 am		**Tea Break**	
10.30 am	**Chairperson**	Emeritus Professor Dr Cheong Soon Keng	
	Plenary 1	**Interventional Oncology (IO): The Fourth Pillar Of Cancer Care** *Professor Dr Wah Tze Min, Senior Consultant Interventional Radiologist (Leeds Teaching Hospitals Trust) and Honorary Clinical Associate Professor (University of Leeds), Adjunct Professor of Radiology, UTAR*	
11.15 am	**Symposium 2** **Chairperson**	**TRANSLATIONAL STEM CELL RESEARCH** *Professor Dr Choo Kong Bung* *Associate Professor Dr Alan Ong Han Kiat*	**AYUVERDA / TRADITIONAL & COMPLEMENTARY MEDICINE** Professor Dr Ngeow Yun Fong Dr Ong Hooi Tin
	11.15 – 11.45	**Preconditioned Mesenchymal Stem Cells Alleviate Bleomycin-Induced Pulmonary Fibrosis** *Associate Professor Dr Chong Kowit Yu* *Chang Gung University (Taiwan)*	**Conventional Medicine And Alternative Medical Practices: A New Friendship?** *Professor Dr Farida Jamal* *University Malaya*
	11.45 – 12.15	**Mesenchymal Stem Cells And Their Application In Articular Cartilage Regeneration: From Research To Clinical Application** *Dr Chong Pan Pan, Universiti Malaya*	**Ayurveda Simplified** *Mr Jeythevan Partiban* *Samkkya Ayurveda*
	12.15 – 12.45	**Stem Cells And Regeneration: Hope And Promise In Dentistry For The Elderly** *Professor Dr Khoo Suan Phaik* *International Medical University*	**The Role of Indian Traditional Medicine in the Care of Elders** *Dr Tharumaningam A/L M. Muthiah* *Ministry of Health Malaysia*
12.45 pm	**Lunch Talk** **Starts at 1.15pm (LT 1)**	**Essence of Chicken as Natural Functional Food for Health Prevention** ***Dr Sherry Wang Xue Ying, Cerebos (M) Sdn Bhd***	
2.00 pm	**Chairperson**	Professor Dr Choo Kong Bung	
	Plenary 2 **(LT 1)**	**Investigation Of Cellular Reprograming And Ipsc Technology In Cancer And Adult Somatic Cells** *Professor Dr Chiou Shih Hwa* *National Yang-Ming University (Taiwan)*	
2.45 pm	**Symposium 3** **Chairperson**	**MEDICAL POTPOURRI** Dr. Leong Pooi Pooi Emeritus Professor Dr Cheong Soon Keng	**GERIATRIC PHYSIOTHERAPY** Mr Abid Hussain Bhat Mr Pramod Divakara Shenoy
	2.45 – 3.15	**Major Respiratory Viruses Associated With Sore Throats: Reducing The Pain Of Viral Load Determination Via Real-Time PCR** *Associate Professor Crystale Lim Siew Ying* *UCSI University*	**Back Care For The Elderly** *Associate Professor Celia Tan Ia Choo* *SingHealth Group Allied Health (Singapore)*
	3.15 – 3.45	**Forensic DNA Profiling: Myths, Challenges And Critical Issues** *Dr Seah Lay Hong* *Department of Chemistry Malaysia*	**Routine Physical Performance Monitoring In Older Adults: The Way To Go.** *Associate Professor Dr Devinder Kaur Ajit Singh* *University Kebangsaan Malaysia*
	3.45 – 4.15	**Cells Of The Tumour Microenvironment: Friend Or Foe?** *Dr Lim Yaw Chyn* *National University of Singapore (Singapore)*	**"How Can We Help The Elderly?"- A Physio Way** *Puan Julaida Embong* *Hospital Kuala Lumpur*
4.15 pm		**Tea Break & Poster Session**	
6.00 pm		**End Of Day 1**	

PROGRAMME DETAILS

26 May 2017 (Friday)

		Medical Sciences (LT 1)	Health Sciences (LT 2)
8.00 am		**Registration**	
8.30 am	Symposium 4	**CANCER RESEARCH**	**GERIATRIC NURSING**
	Chairperson	*Professor Dr Lim Yang Mooi* *Professor Dr Yap Sook Fan*	*Ms Liew Siew Fun* *Ms Choo Peak Yean*
	8.30 – 9.00	**Breast Cancer In Asian Women: From Germline Mutations, To Somatic Mutations To Improving Survivorship** *Professor Dr Teo Soo Hwang* *Cancer Research Malaysia*	**'Forget me Not' Caring for the elderly** *Puan Roslawati Ramli* *Hospital Kuala Lumpur*
	9.00 – 9.30	**Fibroblast Growth Factor Receptor 4 (FGFR4) And Fibroblast Growth Factor 19 (FGF19) Autocrine Axis In Breast Cancers** *Professor Dr Leong Chee Onn* *International Medical University*	**Leaking In Elderly** *Ms Choo Peak Yean* *Universiti Tunku Abdul Rahman*
	9.30 – 10.00	**Taming The Kras Beast: Orally-Administered Immunotherapeutics Against Kras Positive Colorectal Cancers** *Associate Professor Dr Lionel In Lian Aun* *UCSI University*	**Cognitive impairment in the elderly** *Ms Tan Hong Yun* *Tan Tock Seng Hospital (Singapore)*
10.00 am		**Tea Break**	
10.15 am	Chairperson	Emeritus Professor Dr Cheong Soon Keng	
	Plenary 3	**Cell And Gene Therapy: Accomplishing The Dreams Of The Elder!** *Professor Dr John Rasko, University of Sydney (Australia)*	
11.00 am	Symposium 5	**SILENT MENTOR**	**MENTAL HEALTH**
	Chairperson	Associate Professor Dr Alan Ong Han Kiat Associate Professor Dr Myo Oo	Professor Dr Koh Chong Lek Professor Dr M Deva
	11.00 – 11.30	**Silent Mentor Programme In Taiwan** *Professor Dr Tseng Guo Fang* *Tzu-Chi University (Taiwan)*	**Depression Among The Elderly** *Dr Hazli Zakaria* *Universiti Kebangsaan Malaysia*
	11.30 – 12.00	**The Origin And Conceptualization Of I·Silent Mentor In Medical Education, Training And Research.** *Professor Dr Chin Kin Fah* *Universiti Tunku Abdul Rahman*	**Managing The Challenging Behaviours In Dementia** *Associate Professor Dr Asrenee Ab Razak* *Universiti Sains Malaysia*
	12.00 – 12.30	**The Experience Of Teaching Human Anatomy In Silent Mentor Programme** *Professor Dr John Judson/Dr Saravanan Jagadeesan* *Universiti Tunku Abdul Rahman*	**Psychosocial Issues In Care Of The Elderly** *Professor Dr M Deva* *Universiti Tunku Abdul Rahman*
12.30 pm		**Lunch**	
2.00 pm	Chairperson	Professor Dr Chin Kin Fah	
	Plenary 4	**Current Status Of Nano Knife Treatment In Cancer Patients** *Professor Dr Niu Li Zhi* *Guangzhou Fuda Cancer Hospital (China)*	
2.45 pm	Symposium 6	**AGING: NEW PERSPECTIVE, NEW CHALLENGES**	**PROBIOTICS / NUTRITION**
	Chairperson	Emeritus Professor Dr Cheong Soon Keng Associate Professor Dr Neoh Leong Kheng	Professor Dr Chin Kin Fah Dr Khine Pwint Phyu
	2.45 – 3.15	**Endocrinology And Aging** *Professor Dr Nor Azmi Kamaruddin* *Universiti Kebangsaan Malaysia*	**High Quality Protein In Active & Healthy Aging** *Ms Jennifer Wu Mei Hsia* *Pharm-D Sdn. Bhd.*
	3.15 – 3.45	**The Aging Kidneys** *Professor Dr Goh Bak Leong* *Hospital Serdang*	**Probiotics And Blood Glucose Management : Does It Work?** *Dr Barakatun Nisak Mohd Yusof* *Universiti Putra Malaysia*
	3.45 – 4.15	**It's Not Too Old To Fight Cancer** *Associate Professor Dr Tho Lye Mun* *Sunway Medical Centre*	**Clinical Nutrition In Morbid Obesity** *Dato' Dr. Tikfu Gee* *Universiti Putra Malaysia*
4.15 pm		**Tea Break & Best Poster Award**	
6.00 pm		**Closing ceremony (LT 1)**	

PLENARY SPEAKER I & II

- Honorary Clinical Associate Professor/Consultant Radiologist
- Clinical Lead for Interventional Oncology at Leeds Teaching Hospitals Trust (LTHT)
- National Chair for Interventional Oncology United Kingdom (IOUK)
- MSc (Birmingham, UK), PhD (Leeds, UK) MB ChB (Leeds, UK), FRCR (UK), CCST (UK), NSR (Malaysia), EBIR (CIRSE), FHEA (UK), Pg. Cert. Clin. Ed. (Leeds, UK)

✉ : pw.pa2016@gmail.com

Associate Professor Dr Wah Tze Min

Dr. Wah Tze Min is a consultant interventional radiologist with specialist interest in both imaging and interventional oncology treatments. Interventional Oncology (IO) is now an emerging clinical discipline and becoming the 4th pillar of cancer care alongside surgical, radiation and medical oncology. Since 2003, she has led and developed the IO programme at the Leeds Teaching Hospitals Trust (LTHT) specializing in image-guided ablation with introduction of various innovative technologies e.g. radiofrequency (RFA), microwave ablation (MWA), cryoablation (CRYO) and irreversible electroporation (IRE) for a range of cancers such as liver, lung, renal, pancreas, adrenal, spleen etc. Leeds is now an established national and international IO centre with reputable clinical outcomes. Today, this is one of the largest programmes in UK that provides a full complement of innovative technologies such as RFA, MWA, CRYO and IRE for cancer treatment. In addition, she is also one of two main experts in the UK with a vast amount of clinical experience in renal ablative therapy. In 2015, she led a team of national experts to form the IOUK group as a special interest group within BSIR with the aim of fostering engagement and collaborative partnerships with internal and external stakeholders regarding the future direction of IO e.g. teaching/training, research & innovation, service delivery and clinical governance.

- Section Chair, Basic Research, Department of Medical Research, Taipei Veterans General Hospital
- Distinguished Professor, The Institute of Pharmacology / The Institute of Clinical Medicine & Gemonic Center, National Yang-Ming University, Taiwan
- Appointment Researcher, Genomics Research Center, Academia Sinica, Taiwan
- MD (School of Medicine, National Defense Medical College), PhD (Institute of Clinical Medicine, National Yang-Ming University), Post-Doc (City of Hope Hospital / National Beckman Research Institute, Stem Cell Lab/Bone Marrow Transplant Center, USA)

✉ : shchiou@vghtpe.gov.tw

Professor Shih-Hwa Chiou

Dr. Chiou is currently a Professor of the Institute of Pharmacology in National Yang-Ming University and an Attending Physician in the Department of Medical Research and Department of Ophthalmology in Taipei Veterans General Hospital (TVGH). In 2002, Dr. Chiou went to the Stem Cell Laboratory of City of Hope/National Beckman Research Institute, where he started his studies of isolating and characterizing multipotent stem cell from adult human tissues, with the support from the Stem Cell Team of VGH. Dr. Chiou's advisor in City of Hope, Stephen J. Forman, M.D., is a pioneer of successful bone marrow transplantation for leukemia since 1976. Under Prof. Forman's supervision, Dr. Chiou has established his research direction in investigating the basic regulatory networks in pluripotent stem-like cells. He later went to Dr. Ralph Reisfeld's lab in the Scripps Research Institute, where he acquired basic research training in cancer and cancer stem cell biology to establish a strong background in cancer research. In 2016, Dr. Chiou go to Bonton Children Hospital and visited Professor Daley George's Lab (Current Dean of Harvard medical School) for international collaboration of Human patient-specific iPSC research. By combining cancer and stem cell research with his expertise in stem cell biology, Dr. Chiou has become one of the leading experts in cancer stem cell in Taiwan.

PLENARY SPEAKER III & IV

- Professor, Sydney Medical School, University of Sydney
- Head, Gene and Stem Cell Therapy Program, Centenary Institute
- Head of Department, Cell & Molecular Therapies, Royal Prince Alfred Hospital
- BSc(Med), MBBS(Hons), PhD, MAICD, FFSc(RCPA), FRCPA, FRACP, FAHMS

✉ : j.rasko@centenary.org.au

Professor John Edward Joshua RASKO, AO

Professor Rasko is an Australian pioneer in the application of adult stem cells and genetic therapy. He directs the Department of Cell and Molecular Therapies at Royal Prince Alfred Hospital and heads the Gene and Stem Cell Therapy Program at the Centenary Institute, University of Sydney. John Rasko is a clinical haematologist, pathologist and scientist with an international reputation in gene and stem cell therapy, experimental haematology and molecular biology. In over 150 publications he has contributed to the understanding of stem cells and haemopoiesis, gene transfer technologies, oncogenesis, human genetic diseases and non-coding RNAs. He serves on Hospital, state and national bodies including Chair of GTTAC, Office of the Gene Technology Regulator – responsible for regulating all genetically-modified organisms in Australia - and immediate past Chair of the Advisory Committee on Biologicals, Therapeutic Goods Administration. Contributions to scientific organisations include co-founding (2000) and past-President (2003-5) of the Australasian Gene Therapy Society; Vice President (2008-12) and President-Elect (2016-17) International Society for Cellular Therapy; Scientific Advisory Committees and Board member for philanthropic foundations; and several Human Research Ethics Committees. He is a founding Fellow of the Australian Academy of Health and Medical Sciences. He is the recipient of national (RCPA, RACP, ASBMB) and international awards in recognition of his commitment to excellence in medical research, including appointment as an Officer of the Order of Australia.

- President, Associate Professor, FUDA cancer hospital, Guangdong, China
- MD (The Forth Military Medical University, Xi'an, China), PhD (The Forth Military Medical University, Xi'an, China)

Professor Dr Niu Li Zhi

Based on the broad background in cardiothoracic surgery, Dr Niu Li Zhi treated more than 10,000 cancer patients who accepted cryosurgery (including irreversible electroporation, IRE) in the past15 years. What makes the cryosurgery different is Dr Niu and his team's percutaneous technique especially percutaneous cryosurgery for pancreatic cancer, central lung cancer and liver cancer nearby gallbladder, diaphragm and hepatic portal. The research named percutaneous cryosurgery as the main method of "unresectable" HCC won the second prize for science and technology progress in Guangdong province. Most of his papers, books and researches are associated with cryosurgery or IRE. He laid the groundwork for ISC (international society of cryosurgery) and was elected vice-chairman of ISC on Nov 27th 2015. His first award winning research "percutaneous cryo-ablation as the main means of "unresectable" HCC" provided a new choice for HCC patients. His latest research, "The comprehensive research of pancreatic cancer treated by irreversible electroporation ablation (nanoknife)", discusses the safety and effect of nanoknife for pancreatic cancer, the tumor reduction mechanism and the analgesic effect. In June 2015, IRE was approved by China's FDA for clinical use. There have been over 100 cases of Nanoknife treatment done for liver or pancreatic cancer patients in China, Dr. Niu and his team have treated more than 70 of them.

SPEAKER'S BIOGRAPHY

Associate Professor Dr Devinder Kaur Ajit Singh

Chair, School of Rehabilitation Sciences
Faculty of Health Sciences Universiti Kebangsaan Malaysia
Jalan Raja Muda Abdul Aziz 50300 Kuala Lumpur Malaysia

- 2009 : PhD (University of Brighton, United Kingdom)
- 2002 : BSc (Hons) Applied Rehabilitation (Physiotherapy) (University of Teesside, United Kingdom)
- 1995 : Diploma in Sports Injuries (CAHPER –CIDA, Malaysia)
- 1988 : Diploma in Physiotherapy (Malaysia)

✉ : devinder@ukm.edu.my

Associate Professor Dr Devinder Kaur Ajit Singh is a senior lecturer at Physiotherapy Programme at Universiti Kebangsaan Malaysia (UKM). She is also Chair of the School of Rehabilitation Sciences, Faculty of Health Sciences, UKM. Prior to joining UKM in 2005, she was a practicing physiotherapist with Ministry of Health, Malaysia for 16 years. Devinder completed her primary diploma in physiotherapy in Malaysia and obtained her degree in Applied Rehabilitation (Physiotherapy) from University of Teesside, UK. She graduated from University Of Brighton, United Kingdom with a PhD in 2009. Her primary research niche area is in Spine and ageing, Geriatric physiotherapy and analysis of function. Her current ongoing projects include falls and frailty among older adults; back muscle function and osteoporosis. Her research has produced a number of publications in highly rated journals including Archives of Physical Medicine and Rehabilitation, Clinical Biomechanics, Muscle and Nerve, Maturitas, Clinical Intervention in Aging, BMC Muskuloskeletal Disorders and BMC Neurology.

Kowit-Yu Chong, Ph.D.

Associate Professor
Chang Gung University
Department of Medical Biotechnology and Laboratory Science
No.259, Wenhua 1st Rd., Guishan Dist., Taoyuan City 33302, Taiwan (R.O.C.)

- Ph. D. in Pharmacology, Southern Illinois University, IL, USA

✉ : kchong@mail.cgu.edu.tw

Dr Chong has completed his Ph.D. from Southern Illinois Univesty School of Medicine, Illnois, USA and postdoctoral studies from Oregan Primate Research Center, Oregon, USA. He is an Associate Professor at Chang Gung University, Taoyuan City, Taiwan. He has focussed his research efforts in preconditioned-stem cell therapy approaches. He has published more than 48 papers in international peer-reviewed journals.

Associate Professor Dr Asrenee Ab Razak

Head of Department, Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kota Bharu, Kelantan

- MD (USM)
- MMED (Psy) (USM)
- PhD (Psy Med) (Monash, Australia)

✉ : asrenee@usm.my

Associate Professor Dr Asrenee Ab Razak is currently serving as Head of Department, Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, Kota Bharu, Kelantan. She has achieved a lot of Research Grants, not only as a Principal Investigator, but also as a co-reseacher. She also has a lot of research publications and participates in teaching and supervison of both undergraduate and graduate students.

SPEAKER'S BIOGRAPHY

Chee-Onn Leong, PhD

Professor
Head, Center for Cancer and Stem Cell Research
International Medical University
No.126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, Malaysia
Tel : +603-2731 7528 Mobile : +6012 208 5170 Fax : +603-8656 7229

- BSc (Hons) Biomedical Sciences (UPM, Malaysia)
- PhD (Nottingham, UK)
- Fellowship (Harvard Medical School, USA)

✉ : Cheeonn_leong@imu.edu.my

Dr Leong has conducted multi-year research focused on drug target discovery, novel molecules development through preclinical and clinical trials, and biomarkers development for diagnosis of refractory breast cancers. He has published extensively in high impact journals, including Nature Cell Biology, Cancer Cell, PNAS, Cancer Research and etc. He has received numerous international awards including the FMD Fellowship (USA), ORS Award (UK) and the IBMS President's Award (UK). He was a Senior Research Fellow at the Harvard Medical School and Massachusetts General Hospital, Boston, USA and is presently a Professor in Cell Biology at the International Medical University, Malaysia and the Director of the Center for Cancer and Stem Cell Research.

Dr. Crystale Lim Siew Ying

Associate Professor
Tel: 012-7516815

- PhD (Molecular Medicine) Universiti Putra Malaysia
- BSc (Hons) Biomedical Science, UPM

✉ : crystalelim@ucsiuniversity.edu.my

Crystale Lim Siew Ying is currently an Associate Professor at UCSI University's Faculty of Applied Sciences. She is also the present Honorary Secretary of the Malaysian Society for Molecular Biology and Biotechnology (MSMBB). Crystale earned a BSc (Hons.) in Biomedical Sciences from the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia (UPM) in 2005, and in 2010 went on to obtain a PhD in Molecular Medicine, also from UPM. Her current research interests are diverse, including epidemiology of antibiotic resistance and alternative counter-mechanisms, macrofungi gene protein characterization, and development of biomolecule spectral profiling protocols.

Dr. Saravanan Jagadeesan

Assistant Professor
Faculty of Medicine and Health Sciences
UTAR, Sungai Long Campus, Kajang, Selangor

- MBBS
- MS (Anatomy)

✉ : saravananj@utar.edu.my

Dr Saravanan Jagadeesan is a Clinical Anatomist with 15 years of teaching experience. He has been teaching anatomy to undergraduate students of medicine, Health Sciences courses and masters student in anatomy. He is also a trained Clinical Sonologist. His research interest are focused on Neuroprotective Effects of Herbal extracts.

SPEAKER'S BIOGRAPHY

Barakatun Nisak Bt Mohd Yusof, PhD

Associate Professor
Department of Nutrition and Dietetics,
Faculty of Medicine & Health Sciences
Universiti Putra Malaysia, 43400 Serdang Selangor

- Postdoctoral Research Fellow, Joslin Diabetes Centre, Harvard Medical School 2015-2016
- PhD (Dietetics); Universiti Kebangsaan Malaysia, 2004-2009
- B.S. (Hons) Dietetics, Universiti Kebangsaan Malaysia, 1999-2002

✉ : bnisak@upm.edu.my

Barakatun-Nisak Bt Mohd Yusof, PhD is an Associate Professor from Department of Nutrition and Dietetics, Faculty of Medicine and Health Sciences, UPM. By profession, she is a dietitian. Dr Nisak earned her PhD from Universiti Kebangsaan Malaysia. She completed post-doctoral training at Joslin Diabetes Centre, Harvard Medical School in the field of Diabetes Clinical Nutrition. She has actively researched lifestyle measures and functional properties for the prevention and management of diabetes. One of them is the previous discovery of the potential role of probiotics in improving diabetes-related outcomes in patients with type 2 diabetes with her team. Her research motivation is to help patients with diabetes achieving optimal glycemic control and reduce the risk of diabetes-related compilation thru ground-breaking measures of clinical nutrition intervention.

Prof. Dr. Goh Bak Leong

Adjunct Professor, FMHS, UTAR
Senior Consultant Nephrologist and Head of Department,
Nephrology Department,
Hospital Serdang
Head, Clinical Research Centre, Hospital Serdang

- B.Med.Sc (UKM)
- MD (UKM)
- FRCP (UK)
- FAMM (Mal)

✉ : bak.leong@gmail.com

Dr. Goh is the Senior Consultant Nephrologist in Serdang Hospital. He is the Head of Department of Nephrology and PD unit which has about 300 prevalent PD patients. He is also the Head of Clinical Research Centre, Serdang Hospital. He is a keen researcher and involved in many international multicentre clinical trials. He is the Principal Investigator in many CKD, SLE, diabetic and hypertensive clinical trials. Dr. Goh has published numerous original articles in international peerreviewed journals in the field of general nephrology, dialysis and transplantation. He has particular interest in PD access and CAPD, and has presented a great number of scientific papers in international meetings and congresses. He is currently the Editor of Malaysian Dialysis & Transplant Registry, and Chair of Renal Transplant Expert Panel for National Transplant Registry.

He became a member of the Royal College of Physicians in United Kingdom MRCP(UK) in 1996. He was awarded the Fellowship of Royal College of Physicians and Surgeons of Glasgow in 2002 (FRCP). He was also awarded the Fellowship of the Academy of Medicine of Malaysia in 2012 (FAMM). Recently, he has served as a member of Working Party on PD Access Guidelines and also dedicated as an international trainer of PD to the nephrologists from Asia Pacific such as Singapore, Brunei, Indonesia under ISPD AC fellowship programme.

SPEAKER'S BIOGRAPHY

Dr. Seah Lay Hong

Director, Department of Chemistry Malaysia, Kuching Branch
Tel : 082-313011
Mobile : 019-6684813

•Diploma Medical Laboratory Technology
•BSc (Hons) Chemistry
•MSc Medical Science (Haematology/Biochemistry)
•PhD (Forensic DNA)

✉ : lhseah@kimia.gov.my
seahlayhong77@gmail.com

Dr. Seah Lay Hong is currently the Director of the Department of Chemistry Kuching. She has been a Forensic DNA scientist with the Department of Chemistry since 1994 and has given expert testimony in courts throughout Malaysia. Dr. Seah is also an associate member of Institut Kimia Malaysia, a member of the International Society for Forensic Genetics and a member of Forensic Science Society Malaysia.

Dr Tan Maw Pin

Associate Professor
Department of Medicine
Faculty of Medicine, University of Malaya

•BMedSci (Nottingham)
•BMBS (Nottingham)
•MRCP(UK)
•CCT (Geriatric and General Medicine, UK)
•MD (Newcastle, UK)

✉ : mptan@ummc.edu.my

Dr Tan received her undergraduate medical training at the University of Nottingham, United Kingdom. After completing her internal medicine specialist training in Nottingham, she moved up north to Newcastle upon Tyne to pursue her higher specialist training in Geriatric Medicine. During that period, she obtained a Royal College of Physician research fellowship to pursue a postgraduate research doctorate in falls in older persons. She has since moved back to the University of Malaya, and continues a keen research interest in the areas of assistive technology, falls, dementia and disability in older persons.

Julaida Binti Embong

Jurupulih Perubatan Fisioterapi Gred U36

•Diploma In Physiotherapy From Kolej Fisioterapi HKL

✉ : julaida@gmail.com

Experience working ata HKL was 16 years and with geriatric team for 12 years. Had opportunity to go geriatric attachment at Tan Tock Seng Hospital Singpore and University of Melbourne. Frequent give a talk in geriatric course in term of sharing knowledge and experience.

SPEAKER'S BIOGRAPHY

Dr Tho Lye Mun

Clinical Associate Professor, FMHS, UTAR
Consultant Clinical Oncologist, Beacon Inernational Specialist Centre

- MBBS (Sydney)
- MRCP (UK)
- FRCR (UK)
- PhD in Molecular Oncology (Glasgow)
- CCT Clinical Oncology (UK)

✉ : lyetho@gmail.com

Assoc. Prof. Dr. Tho is currently a Consultant Clinical Oncologist at Beacon International Specialist Centre and an Associate Professor at UTAR. He completed his undergraduate MBBS at the University of Sydney as a John Crawford Scholar. Thereafter he completed postgraduate training in the United Kingdon in Internal Medicine (MRCP) and Clinical Oncology (FRCR). Subsequently he obtained a Cancer Research UK / Royal College of Radiologist Fellowship to pursue a PhD in molecular oncology ast the Beatson Institute for Cancer Research, Glasgow. He has been awarded the John Paul Career Award and the Anne Hollman Medal. He was formerly an Associate Professor at Universiti Malaya and Academic Clinical Lecturer at the University of Glasgow.

He is an investigator on numerous clinical trials, sits on various advisory boards and has an ongoing interest in stereotactic radiosurgery and immune-oncology.

Dr Goh Cheng Soon

Director
Traditional and Complementary Medicine Division
Ministry of Health Malaysia
Office No : 03-22798111 HP : 017-3901629

- Bachelor of Medicine & Bachelor of Surgery (MBBS)
- Master of Laws in Medical Law (LLM)
- Doctor of Philosophy in Law (PhD)

✉ : dr.goh_cs@moh.gov.my

Dr. Goh Cheng Soon is presently the Director of the Traditional and Complementary Medicine Division, Ministry of Health, Malaysia.

Dr Goh began her career in Malaysia as an allopathic doctor in Hospital Queen Elizabeth, Kota Kinabalul, Sabah, in 1993. Subsequently, she provided medical services in Hospital Kuala Lumpur and Hospital Kuala Pilah prior to her transfer to the Medico-Legal Unit, Practice Division and Traditional and Complementary Medicine Division. She has 14 years of clinical experience and more than five years experience in the field of traditional medicine. Administratively, Dr Goh has more than five years experience in the field of leadership in handling administrative works, and dealing with the junior officers and other staffs. She was awarded the "Award of Excellence Service" in 1999 and 2005 for her good work performance under the Malaysian Ministry of Health Assessment System. Recently, she was awarded the "Best Project Report Award" by the Public Service Department Malaysia in the 22nd JPA – BMCC Management Development Programme 2017.

Holding the post of the Director of Traditional and Complementary Medicine Division, she has presented many talks at international and national meetings and seminars, and represented the health ministry at international and national level for various activities relevant to traditional and complementary medicine. She is one of the council members in the Council of Traditional and Complementary Medicine, Ministry of Health, Malaysia; she is also the Focal point for Malaysia-ASEAN Traditional and Complementary Medicine, Focal point for Malaysia-China Chinese Medicine, and Focal point for Malaysia-India Indian Systems of Medicine.

SPEAKER'S BIOGRAPHY

Dr. Hazli Zakaria

Department of Psychiatry
Universiti Kebangsaan Malaysia Medical Centre (UKMMC)
Jalan Yaacob Latif
Bandar Tun Razak
Cheras, Kuala Lumpur
56000 Malaysia

✉ : chermzak@yahoo.com

Dr. Hazli Zakaria is currently holding a position of a lecturer and psychiatrist at Universiti Kebangsaan Malaysia Medical Centre (UKMMC), Cheras, Malaysia. He received his medical degree from the University of Adelaide, Australia and Postgraduate Psychiatric training from the National University of Malaysia (UKM). His main clinical interest is adult psychiatry particularly on the recovery aspect of major psychiatric disorders mainly schizophrenia, mood disorder, adult ADHD and substance abuse. He is actively involved in mental health awareness program and has been conducting regular workshops for primary care doctors, mental health staffs and general public together with patients' rehabilitative projects. He is very much interested in research and has presented his research findings in national conferences. His current research interests include addiction among patients with adult ADHD. He is a member of Nicotine Addiction Research & Collaborating Centre (NARCC) of University Malaya Centre of Addiction Science. Fellow of Yongin WHO Collaborating Centre in psychosocial rehabilitation. He is a member of development group of Malaysian Clinical Practice Guidelines on bipolar disorder He is a firm believer in continuously updating his knowledge in psychiatry and other fields related to it.

Dr. Lionel In Lian Aun

Assistant Professor Department of Biotechnology, Faculty of Applied Sciences,
UCSI University, Kuala Lumpur, Malaysia

- 2011–2013 - Post-Doctoral Research Fellow (Molecular Oncology), University of Malaya
- 2007–2010 - Doctoral Degree (Molecular Oncology), University of Malaya
- 2005–2006 - Masters Degree (Biotechnology), Malaysia University of Science and Technology (M.U.S.T)
- 2001–2004 - Bachelors Degree (Biotechnology), University Putra Malaysia

✉ : lionelin@ucsiuniversity.edu.my

Dr. Lionel obtained his B.Sc. in Biotechnology from University Putra Malaysia in 2003, and a M.Sc. in Biotechnology from the Malaysian University of Science and Technology in 2005. He joined Merck Malaysia as a product specialist in microbiology and microscopy until 2006, and later on graduated from University of Malaya in 2010 with a Ph.D in molecular oncology. Over the next three years, he continued on as a Post-Doctoral Research Fellow at University of Malaya where he continued on his research in the field of anti-cancer drugs and cancer immunology. In 2014, he joined UCSI University, and is currently an assistant professor at the Department of Biotechnology, Faculty of Applied Sciences. Dr. Lionel is also the Honorary Treasurer of the Malaysian Society for Molecular Biology and Biotechnology (MSMBB), an editorial board member for the Asia Pacific Journal of Molecular Biology and Biotechnology (APJMBB), and the faculty's Head of Research and Postgraduate Studies at UCSI University. Over the past 5 years, he has published more than 15 research articles, book chapters as well as patents describing the pharmaceutical composition and delivery of anti-cancer therapeutics. He is also the principal investigator of two national research grants on cancer vaccines and immunotherapeutics awarded by the Malaysian Ministry of Higher Education, and the Malaysian Ministry of Science, Technology and Innovation. He has supervised 3 doctoral candidates, 8 MSc candidates and over 20 undergraduates over the past 7 years. In 2016, he was awarded the Most Promising Researcher Award by UCSI University and the Innocentive Challenge Solver Award for his work on the oral delivery of biomolecules through the gastrointestinal tract in 2017.

SPEAKER'S BIOGRAPHY

Tseng, Guo-Fang

Vice president,
Dean of Research and Development,
Director of Medical Simulation Center,
Professor and Head of Department of Anatomy
Tzu-Chi University

•BS, National Taiwan Normal University, Taiwan;
•MS, Anatomy, College of Medicine, National Taiwan University;
•PhD, Anatomy, University of Wisconsin-Madison, USA;
•Postdoctoral fellow, Neurology and Neurological Sciences,
Stanford University Medical Center, USA

✉ : guofang@mail.tcu.edu.tw

Dr. Guo-Fang Tseng is a Professor of Anatomy of the Tzu Chi University in Taiwan. He was professor and chairperson of the Department of Anatomy of the National Taiwan University before moving to Tzu Chi University. He is currently the vice president, dean of the Research and Development, director of the Medical Simulation Center, and head of the Anatomy Department of the Tzu Chi University and pioneers the renowned Silent Mentor Program of the University.

Ms Jennifer Wu Mei Hsia

Dietitian
Pharm-D Sdn Bhd (Malaysia)

•Postgraduate Diploma in Dietetics (UKM)
•Bachelor (Honors) Degree in Nutrition & Dietetics (Taipei Medical University, Taiwan)

✉ : jenniferwu@pharmd.com.my

Ms Jennifer graduated as a dietitian from Taipei Medical University and subsequently obtained her postgraduate in the same field from UKM. She is currently working as a dietitian in Pharm-D Malaysia, focusing on medical nutrition with a special interest in medical grade modular protein. She is also an active member of Malaysia Dietetic Association (MDA) and American Oversea Dietetics Association (AODA) involving in various voluntary works related to her field of specialty.

Ms. Tan Hongyun

Geriatric Advanced Practice Nurse
Tel : 65-97688748

•Master of nursing
•Advanced diploma in Gerontology
•Bachelor of nursing
•Diploma of nursing

✉ : Hongyun_tan@ttsh.com.sg

Hongyun is a Geriatric Advanced Practice Nurse in Tan Tock Seng Hospital, Singapore. She plays a key role in the development of Framework for the Inpatient Frail Elderly (FIFE), which is a new model of geriatric care in Singapore. She leads the training of Geriatric Resource Nurse under Nurses Improving Care for the Healthsystem Elders (NICHE). She is currently working in a mobile geriatric assessment team and Geriatric emergency service to enhance care of the older adults in the acute hospital.

SPEAKER'S BIOGRAPHY

Ms. Choo Peak Yean

Lecturer
Department of Nursing
Faculty of Medicine and Health Sciences
Universiti Tunku Abdul Rahman

- Teaching and Learning in Nursing (Teaching Methodology), International Medical University, Kuala Lumpur, Jan - May, 2015.
- Masters of Nursing (Education), Monash University, Australia, Jan 2010 – Dec 2012.
- Bachelor of Nursing (Post Registration), Monash University, Australia, Jan 2000 – Dec 2001.
- Diploma In Nursing, Nanyang Polytechnic, Singapore, May 1996 – June 1998.

✉ : choopeaky@utar.edu.my

Ms Choo Peak Yean is involved in the nursing profession for almost 20 years and is now a lecturer in Universiti Tunku Abdul Rahman. After her basic diploma in Nursing, she continued her life-long education and obtained her bachelor and master degree with Monash University and a teaching methodology certificate. She has clinical experience both in the Singapore public hospital and Malaysia's private hospital. Her teaching and research supervision includes the diploma and bachelor level (nursing, MBBS, education and early childhood education programmes). She was also involved in training the trainer's course for new teaching staff and giving seminars and workshops to staff nurses. She is registered with the Malaysian Nursing Board, holds a current Annual Practicing Certificate and a member of UTAR's Centre of Research for non-Communication Diseases.

Currently Ms Choo is involved in conducting interviews and assessment in a geriatric project that focus on geriatric syndromes. She has interest in providing better care for the older population and is looking into ways to improve quality of life in the elderly.

Ms. Roslawati Binti Ramli

Nurse
KUP U32
Fall Nurse Medical Dept/Geriatric Unit
Blok A (Harmoni) Ting 14-07 Kuaters Hospital Kuala Lumpur

- Diploma In Nursing, Seremban Nursing College
- Malaysia Certificate of Eduction (SPM), SMK Raja Perempuan Ipoh Perak

✉ : roslawatiramly@gmail.com

Working Experience
2003 – 2015 - Geriatric Unit Department Hospital Kuala Lumpur.
2015 – 2016 – Geriaric & Memory Day Care SCACC

Profesional Affiliation
Post Basic Geronology 2007
Fall Attachment at Hosp Tan Tock Seng Singapore 2013

Awards
Exellence Sevice Awards HKL 2007
2nd place 'Pertandingan Kajian Kejururawatan' peringkat HKL 2015
Excellence Service Awards Medical Department 2014
2nd place for the 'Best Oral Presentation' Selangor Geriatric Conference 2016

SPEAKER'S BIOGRAPHY

Noran Naqiah Hairi / Associate Professor

Head of Julius Centre University of Malaya
Department of Social and Preventive Medicine,
Faculty of Medicine,
University of Malaya

- MBBS (Malaya)
- MPH (Malaya)
- MPH (Epidemiology) (Malaya)
- PhD (Sydney)

✉ : noran@um.edu.my

Noran N Hairi is Associate Professor in the Social and Preventive Medicine Department. She studied medicine at the University of Malaya and graduated in 1996. She commenced her Master of Public Health and Master of Public Health (Epidemiology) and was awarded with distinction for both masters degree from the University of Malaya in 2003 and 2004. Noran obtained her PhD degree in 2011 from the School of Public Health, University of Sydney, Australia.

Noran has research interests in is epidemiology of aging and aging related diseases particularly in the preventive activities and role of health services in maintaining quality of life for older people. Her work has included health assessment, physical disability and functional limitation, elderly abuse and neglect, age-related eye diseases, sarcopenia, chronic pain and frailty among older people. Noran is currently the Principal Investigator for UM Grand Challenge called PEACE (Prevent Elder Abuse and negleCt initiative.

Noran has experience in training researchers at masters and doctoral level. Under her supervision, several students have completed their research higher degrees at postgraduate level – six students have completed their Masters and five PhD's. Her field of specialisation are Epidemiology, Preventive Medicine and Geriatrics and Gerontology.

Administratively, Noran is the Head of Julius Centre University of Malaya, as well as the SPM Post-graduate Coordinator. Noran is one of the Editors of the Asia-Pacific Journal of Public Health (APJPH), an ad-hoc reviewer for the Preventive Medicine Journal, Asia Pacific Journal of Public Health and the Malaysian Orthopedic Journal

Ms. Maryam Maqsood

PhD Scholar (Medical Microbiology)
Department of Medical Microbiology and Parasitology
Faculty of Medicine and Health Sciences
University Putra Malaysia

- Masters in Microbiology(Gold Medallist 2007) ,SBK Women's University, Pakistan
- B.S Biomedical Sciences, University of Balochistan, Pakistan

AMs. Maryam Maqsood worked as an extension assistant in Department of Microbiology, Bolan medical complex and teaching hospital, Pakistan. She also worked as a clinic assistant in Department of Dermatology and Department of Gynaecology, Bolan medical complex and teaching hospital, Pakistan. She served as a lecturer and teaching biomedical students in Islamia College Quetta, Pakistan. She served as a Lecturer at SBK Women's University, Pakistan. She moved to Malaysia in 2014 intended to acquire PhD in Medical Microbiology. She is active in the area of Microbiology and Parasitology for over 10 years and has been part of Academia. Special interests are anti-dengue drug development.

SPEAKER'S BIOGRAPHY

Prof. Dr. Nor Azmi Kamaruddin

Head, Diabetes & Endicrinology, National University of Malaysia Medical Centre, Kuala Lumpur

- MBBS(Monash)
- M.Med(M'sia)
- FACE(USA)
- AM(Mal)

✉ : dr.nor.azmi@gmail.com

Nor Azmi Kamaruddin is currently Professor of Medicine at the Department of Medicine, National University of Malaysia (UKM) and Head of the Diabetes and Endocrine Unit, UKM Medical Centre, Kuala Lumpur. He graduated from Monash University, Melbourne, Australia in 1986 and obtained his Master of Medicine (Internal Medicine) from UKM in 1994. He did his postgraduate endocrine training in Hospital Kuala Lumpur and the Northern General Hospital, Sheffield, UK. In 2009 he was made Fellow of the American College of Endocrinology.

He has contributed more than 125 international and national research papers including publications in New England Journal of Medicine, The Lancet, Clinical Endocrinology, Thyroid, Diabetes Care, JAMA, American Heart Journal, International Journal of Clinical Nutrition and World Journal of Surgery. He was a reviewer for Clinical Endocrinology, Malaysian Medical Journal Endocrinology & Metabolism (Korea) and Malaysian Journal of Medical Science (MJMS) etc. He sits on the editorial boards of Journal of ASEAN Federation of Endocrine Societies (JAFES), Endocrinology & Metabolism (Korea) and Journal of Endocrinology & Metabolism (JEM).

Nor Azmi is also actively involved in training of physicians and endocrinologists. He has trained more than 50 clinical endocrinologists including those from Indonesia, Iran and Yemen. He was previously Head, Department of Medicine, UKM (2004-2007), Council Member of the Malaysian Medical Council (2010-2013), Chairperson Sub-Specialty Committee (Endocrinology), National Specialist Registry (2014-2016), President & Chairman of the Organising Committee of the Asia-Oceania Congress of Endocrinology (2006-2010), President of the Malaysian Endocrine and Metabolic Society (MEMS)(2008-2016), President of the ASEAN Federation of Endocrine Societies(AFES)(2013-2015), Chairperson of the 18th AFES Congress 2015 and the first endocrinologist from South East Asia to sit in the Executive Committee of the International Society of Endocrinology (ISE)(2014-2016).

Dr. Farida Jamal

Consultant Microbiologist

- MBBS
- MSc.
- MRCPath

✉ : Faridafjamal@gmail.com

F.Jamal graduated from the University of Dhaka, Bangladesh in 1970, Following housemanship and working as a medical officer at the Kuala Lumpur Hospital, she joined the Insttute for Medical Research as a trainee pathologist. In 1975 she began her career in academic medicine at University Kebangsaan Malaysia and retired as a professor of microbiology in 2000. She continued to work at the Faculty of Medicine, University Putra Malaysia.as professor of microbiology till 2014. Currently she a part time lecturer at the Faculty of Medicine, University of Malaya. Medicine and humanities has been her area of interest. From 1994-1996 she was trained in the history of Islamic medicine as an auditing student at the Institute of Islamic Thought and Civilzation, Kuala Lumpur. Since then she has been a member of the International Society for the History of Medicine. She has taught history of medicine to medical students and has published and presented on this subject, nationally and at international conferences.

SPEAKER'S BIOGRAPHY

Professor Celia Tan

Group Director, Allied Health
Singapore Health Services
168 Jalan Bukit Merah
Surbana One #03-02
Singapore 150168

- Doctor of Philosophy, Dept of Surgery, Faculty of Medicine, University of Western Australia, Australia
- Masters in Applied Science (Physiotherapy) University of Sydney, Australia
- Graduate Diploma in Applied Science (Paeds) University of Sydney, Australia
- Diploma in Physiotherapy Auckland Technical Institute, New Zealand

✉ : Celia.tan.i.c@sgh.com.sg

Prof Celia Tan started in health care as a physiotherapist in 1983 and quickly developed the passion for clinical capacity building and service expansion to meet the increasing health care needs of her patients and fellow colleagues. In her more than 30 years of experience in the healthcare sector, she has started many new clinical services, educational and research centres in SGH and in SingHealth, such as the satellite Rehabilitation services (Rehab Associates) in the community polyclinics to bring rehab closer to the patient's home, Singapore's first postgraduate Allied Health training institute (PGAHI) and College of Allied Health, established the interdisciplinary and multi- and inter-professional SGH Lifestyle Improvement and Fitness Centre (LIFE) and the Biomedical Skills training laboratory to support Allied Health and medical research in robotics and biomechanics.

A visionary leader, Celia has been in the forefront of leadership providing Physiotherapy and Allied Health consultation to the Ministry of Heath, Singapore International Foundation and the WCPT, Asia Western Pacific Committee and Singapore Physiotherapy Association, where she led as President for more than 10 years. She also has a number of collaborations with overseas universities and is currently an Honorary Fellow of Melbourne University and Adjunct Professor of Curtin University, Australia, External Examiner with Universiti Tunku Abdul Rahman, Malaysia and Visiting Professor with London South Bank University, UK.

Celia's passion is to support and facilitate health care professionals to rise to their highest potential as clinicians, educators and researchers, so that patients are well cared for with the highest quality and state of the art interventions.

Professor Dr John Paul Evangel Judson

Professor
Department of Pre-clinical Sciences
Faculty of Medicine and Health Sciences
Universiti Tunku Abdul Rahman

- Diploma in Hospital Administration, University of Madras
- Master of Surgery (Anatomy), University of Madras
- Bachelor of Medicine and Surgery, University of Madras

✉ : judson@utar.edu.my

Prof Dr John Paul Judson is a clinical anatomist with more than thirty five years of experience teaching undergraduate and post graduate students of medicine and allied health sciences at all levels. He has many publications (including a series on the history of Medicine) and his research interests revolve around medical education and hypertensive diseases of pregnancy of placental origin. Professor Judson is now a Professor in the Faculty of Medicine and Health Sciences in the School of Medicine, Universiti Tunku Abdul Rahman, Selangor, Malaysia.

SPEAKER'S BIOGRAPHY

Dr. M Parameshvara Deva

SENIOR PROFESSOR OF PSYCHIATRY,
FACULTY OF MEDICINE AND HEALTH SCIENCES, UTAR

- MB;BS,
- FRCPsych
- FRANZCP
- FAMM
- DPM

✉ : parameshvara@utar.edu.my

Psychiatrist since 1972
Appointed Professor of Psychiatry, University of Malaya in 1992. Worked as Professor at University of Malaya, University of Sheffield, Perak College of Medicine University of Papua New Guinea, MARA University of Technology, Malaysia Fiji National University (Fiji School of Medicine), MAHSA University Fac. of Medicine Currently senior Professor at University Tunku Abdul Rahman
Head of Departments of Psychiatry 14 years
WHO Acting Regional Adviser in Mental Health, WHO office for Western Pacific Manila 1998-1999
Consultant to WHO Western Pacific Region, Manila in Mental Health from 1999-

Currently

- Founder, Past President and Hon Member Malaysian Psychiatric Association
- Founder member and Past President ASEAN Federation for Psychiatry and Mental Health
- Founder Patron of Asian Federation of Psychiatric Associations (AFPA) founded in 2005
- Founder Vice President, Council member and past President World Association for Psychosocial Rehabilitation (WAPR)
- Founder and current Hon. President of WPA Section on Psychiatry in Developing Countries 2011-Chairman, Western Pacific Division of Royal College of Psychiatrists UK, 2010-2013
- Adviser to Cambodian Association for Mental Health since 2009-

Professor Khoo Suan Phaik

- BDS (Mal), MSc (Lond)
- FFDRCSI (Oral Med)
- FDSRCPS (Glasgow)
- PhD (NUS, Spore)

Dr. Khoo Suan Phaik is a Professor of Oral Pathology & Oral Medicine at the School of Dentistry, International Medical University (IMU) and is the Associate Dean since 2012. She is presently responsible for postgraduate studies and continuous learning. She obtained her Masters in the field of Oral Pathology in the UK, Fellowship of the Royal College of Surgeons of Ireland, Fellowship of the Royal College of Surgeons and Physicians of Glasgow and PhD from the National University of Singapore. Prior to joining IMU she has been working at the University of Malaya for 20 years. Her clinical practice is restricted to the specialty of Oral Medicine and to diagnostic Oral Pathology. She has published widely and is an invited speaker in various local and international conferences. Her research interest lies in oral mucosal diseases and regenerative dentistry.

SPEAKER'S BIOGRAPHY

Professor Dr Yap Sook Fan

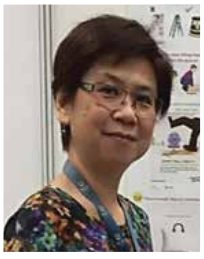
Senior Professor,
Deputy Dean (R&D and Postgraduate Programmes)
FMHS, UTAR

•MBBS, University Malaya
•Master of Pathology (Chemcial Pathology), University of Malaya
•FRCPath, Royal College of Pathologists, UK
•FRCPA, Royal College of Patholggists, Australasia

✉ : yapsf@utar.edu.my

Prof Yap has over 30 years of teaching experience starting from 1981, as a Lecturer in Department of Pathology under the Faculty of Medicine, UM. She subsequently progressed to be an Associate Professor in 1986 and the Professor of Pathology in 1994. She was appointed as Foundation Head, Department of Allied Health Sciences, Faculty of Medicine, UM in 1993, Senior Consultant Chemical Pathologist, Division of Chemical Pathology, Clinical Diagnostic Laboratory (CDL), University of Malaya Medical Centre (UMMC) in 1994 and Head of Clinical Diagnostic Laboratory (CDL), UMMC in 1998. Prior to her present appointment, Professor Yap was the Professor and Deputy Dean of the Life Science Programme, Faculty of Information Science and Technology (FIST), Multimedia University (MMU) from year 2006.

Being an active researcher in basic sciences and pathology, she has authored or co-authored over 100 publications in both national and international peer-reviewed journals and books. She has won many research grants and currently, her research interest is in the clinical validation for TB PCR and evaluation of protein chip for TB detection, and the immortalization of Hepatocytes in culture using HPV oncoproteins and hTERT and the effect on the cell regulatory pathway.



Dr. Lim Yaw Chyn

Senior Lecturer
Department of Pathology, National University of Singapore.
5 Lower Kent Ridge Road, 119074 Singapore

•MSc in Biomedical Sciences, University of Bradford, UK 1992
•PhD in Biomedical Sciences, University of Bradford, UK 1995

✉ : Yawchyn_lim@nuhs.edu.sg

Dr. Lim Yaw Chyn trained and served in the Department of Pathology, University Kebangsaan Malaysia from 1982-1991. While there, she developed an interest in Histology, Haematology and Immunology. In 1991, she enrolled in the Department of Biomedical Sciences, University of Bradford, UK to further my education and graduated with a PhD in 1995. She post-doctoral training (1996-2003) was at the Vascular Research Division, Brigham and Women's Hospital and Harvard Medical School, USA. She joined the Department of Pathology and Department of Physiology, National University of Singapore in April, 2003. Currently, she is a Senior Lecturer in the Department of Pathology. Her research interest is in the tumour microenvironment. Her lab has developed in-vitro models to study the cell-cell interactions between T cells, macrophages, endothelial cells and tumour cells from various solid tumours. In a pilot collaborative study, she examined the feasibility of using nanoparticles to target T cells to tumour sites in-vitro.

SPEAKER'S BIOGRAPHY

Professor Dr Teo Soo Hwang

Chief Executive and Head of Breast Cancer Research Programme
Cancer Research Malaysia
Tel: 012 6888063

•PhD (Cambridge)
•MA (Cambridge)

✉ : Soohwang.teo@cancerresearch.my

Dr. Soo-Hwang Teo established, and is now Chief Executive of Cancer Research Malaysia, Malaysia's first independent cancer research non-profit organization, which is funded, managed, and staffed by Malaysians and specifically focused on research of cancers prevalent in Malaysia. These include breast cancer, oral cancer, and nasopharyngeal cancer. Since its establishment in 2001, Cancer Research Malaysia has published more than 170 scientific publications, filed 4 patents, established new clinical services, and trained Malaysian cancer researchers.

Prof Teo is also the Principal Investigator of the Malaysian Breast Cancer Genetic Study (MyBrCa), the Malaysian Ovarian Cancer Genetic Study (MyOvCa) and the Malaysian Mammographic Density Study (MyMammo). In collaboration with the University of Cambridge (Prof Doug Easton), MyBrCa has been part of the Breast Cancer Association Consortium and this has led to the identification of more than 100 genetic loci associated with an increased risk to breast cancer. This is of particular importance because there are few cohorts in Asia and MyBrCa makes an important contribution as these studies are only possible through collaboration involving large numbers of patients. In addition, Prof Teo's team builds models for risk assessment in the Asian population integrating lifestyle, genetic and mammographic images, and conducts community programmes to downstage breast cancer.

As of 25 Mar 2017, Prof Teo has published 138 research articles, which have been cited more than 5,000 times, with an average of 30 citations per article on WebOfScience. Prof Teo's H-index is 36 (Google scholar) and i10-index is 79. Prof Teo was appointed an Adjunct Professor of University Malaya in 2008, an Eisenhower Fellow in 2010, a Fellow of the Academy of Sciences on 2014 and won to Top Research Scientist Award in 2014.

Mr.Jeythevan Partiban

Managing Director
Samkkya Healthcare Group

•1998 Diploma in Electrical and Electronics Engineering – Informatics College
•2000 Diploma in Business Administration – Amset College

✉ : jthevan@gmail.com

Samkkya HealthCare Group – Malaysia (2004 – Present)
•Samkkya Ayurvedic Clinic - Bangsar
•Samkkya Yoga – TTDI
•Samkkya Integrated HealthCare – Melaka
•Samkkya Ayurvedic Training Institute – Melaka
•Samkkya Integrative Ayurvedic Wellness - Melaka

SPEAKER'S BIOGRAPHY

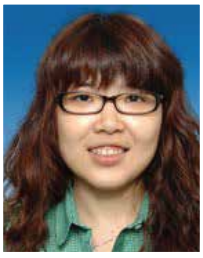
Dr. Chong Pan Pan

Senior Lecturer
Tissue Engineering Group (TEG), National Orthopaedic Centre of Excellence in Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia

•Postdoctoral Research Fellow, University of Malaya ((2013 – 2016)
•PhD (Tissue Engineering), University of Malaya (2013)
•MSc (Biochemistry), National University of Malaysia (2004)
•BSc (Microbiology), National University of Malaysia (2001)

✉ : pan2chong@gmail.com

Dr Chong Pan Pan is highly qualified with B.Sc. (Hons) Microbiology (2001), M.Sc. Biochemistry (2004) and successfully completed PhD (2013) on her research on mesenchymal stem cells (MSCs) and skeletal tissue engineering. After that she works as post-doctoral research fellow (2013-2016) at the National Orthopaedic Centre of Excellence in Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya (UM), Malaysia. Currently, she is the senior lecturer in NOCERAL. Additionally, she is the person in charge to set up the Good Manufacturing Practice (GMP) Laboratory in NOCERAL. She has also been put in charge of the newly proposed clinical study, entitled the use of staged intra-articular injection of cultured autologous mesenchymal stromal cells following marrow stimulation of the repair of focal articular cartilage defects. Her research interest involves the current and innovative area of tissue engineering and manipulation of adult mesenchymal stem cells (MSCs) for future use as biological therapies for poorly regenerating tissues. Her work focuses on driving the adult MSCs from bone marrow, peripheral blood and adipose tissue along chondrogenic lineages for later transplantation to replace worn out joint cartilage in patients suffering from joint disorders, including trauma or osteoarthritis. To attest her work, Dr. Chong has published in several quality peer reviewed journals and presented her works extensively and globally at numerous international level conferences. At that time, she has also won a number of awards, including top prizes at the regional level, such as Young Investigator Awards, L'Oréal Malaysia for Women in Science, Best Poster/Oral Presentations and travel fellowships etc. In addition, she has participated in several biotechnology exhibitions and won many innovation awards for her work on MSCs as biological therapies for tissue regenerations. She has also developed intellectual property related to these novel works which has been successfully patented.



Susuana Kuek Binti Kamal Kuek

University of Tunku Abdul Rahman
Faculty of Medicine And Health Siciences
Department of Chinese Medicine
Lecturer
010-2258095

•On-The-Job Phd student in Gynecology of TCM,Nanjing University of Chinese Medicine
•Master in Gynecology, Fudan University
•Bachelor of Medicine, Shandong University School of Chinese Medicine

✉ : susuanak@utar.edu.my

SPEAKER'S BIOGRAPHY

Dr. Sherry WANG Xueying

HEAD of Scientific Collaborations Product Development,
Health Supplement Division BRAND'S Suntory
Address: 3 Biopolis Drive, Synapse #06-14-19, Singapore 138623
Phone: +65 6578 9473

- PhD
- MBA

✉ : swxy@cerebos.com.sg

Dr. Wang was one of the first scholars to be awarded by the Economic Developmental Board of Singapore-GlaxoWellcome (EDB-GSK) for the pursuit of further degree in life sciences. She graduated from the University of Toronto with a specialist in Biochemistry and then went on to pursue her Ph.D. at the Institute of Molecular and Cell Biology, Singapore, where she conducted research in the areas of developmental biology and human diseases. In 2006, Dr. Wang joined Prof. Elizabeth Blackburn's lab (Nobel Prize Laureate for Physiology and Medicine, 2009) in the University of California (UCSF) where she held a Susan Komen Breast Cancer Foundation Fellowship. Dr. Wang has won many awards including the AACR-MERCK award and was appointed the Assistant Professor and Principal Investigator (Head) of her lab in National University of Singapore (NUS) in 2008 to further research into telomerase for treatment of human cancer and ageing disorders. Together with her team in NUS, Dr. Wang has since published more than 30 original research articles and has been recognized as a visible leader in the field of cancer and ageing with numerous invited talks and reviews. She was also the organizer and moderator of the event "Women in Science/Medicine" held in NUS in 2013, including speakers who are Nobel Laureates and women of the year from her world magazine. Meantime, Dr. Wang completed a part-time Master degree in business administration (MBA) where she specialized in strategy and organization and has also led a diverse team of Medtech Innovators to win the best team for Singapore-Stanford Biodesign 2015. Currently, Dr. Wang has joined BRAND'S, Suntory, to lead scientific collaborations in health supplement division as she utilizes her MBA and scientific knowledge to see to commercialization of research and to make research beneficial for human health.

Professor Dr Chin Kin Fah

Clinical Professor
Department of Surgery, Faculty of Medicine and Health Sciences, UTAR

- Doctor of Medicine (Surgery), University of Hull
- M.B.Ch.B., University of Aberdeen, Scotland
- FRCSGlasg, FRCS(Gen Surg), CCST(UK) AM

✉ : chinkf@utar.edu.my

In 2008, Prof Chin was appointed an Associate Professor and Consultant Upper GI Surgeon at the University of Malaya, Kuala Lumpur, Malaysia. Since he left UM in December 2014, he took up the position of Professor in Surgery in Universiti Tunku Abdul Rahman and an Adjunct Professor in INTI International University. Presently, he is the Resident Consultant Surgeon in Gleneagles Hospital Kuala Lumpur and visiting consultant surgeon to Sungai Long Medical Centre, Tung Shin Hospital and Assunta Hospital, providing a comprehensive advanced laparoscopic surgery service. Currently, he is also the Head of School for the School Of Medicine, Taylor's University.

SPEAKER'S BIOGRAPHY

Dr. Tharumaningam M Muthiah

Senior Assistant Director – Traditional & Complementary Medicine,
Division of Ministry of Health, Malaysia

- Medical Doctor (MBBS) – Banglore, India (1993)
- Masters in Healthcare Administration (MSc) – USA – 2004
- Masters in Science (Yoga)
  – Tamil Nadu Physical Education and Sports University in Chennai, India – 2014
- PhD in Medical Education – Texila American University – (2016)

✉ : drtharma@gmail.com

1. Former Deputy President of Malaysia Hindu Sangam (MHS)
2. Currently Head of Religious Bureau - Malaysia Hindu Sangam (MHS)
3. President – Malaysia Organisation for Knowledge on Hindu Science & Arts (MOKHSA)
4. Director – Malaysia Hindu Sangam Cooperative Society (KOPHISAN)

Dato' Dr. Tikfu Gee

Universiti Putra Malaysia

ABSTRACTS OF PLENARY SPEAKER'S PRESENTATION

Interventional Oncology (IO): The Fourth Pillar of Cancer Care

Professor Wah Tze Min

This plenary lecture aims to provide an overview of the emerging new clinical discipline-Interventional Oncology (IO) as the 4th pillar of cancer care. This will include the historical background, current status and also the future direction of IO.

Throughout the world, IO compliments surgical, medical and radiation oncology disciplines to provide important cancer treatments for patients in a specialist cancer centre. IO treatments consist of a wide ranging of image guided cancer therapies that involve both the vascular techniques e.g. chemo-embolization, radio-embolization and non-vascular techniques e.g. using ablative (RFA, MWA and CRYO) or non-ablative technologies e.g. irreversible electroporation (IRE).

Currently, the global cancer statistics have indicated that 50% of the population will develop cancer during their lifetime. With the availability of imaging and screening programme, increasingly, cancers are detected at an earlier stage. Therefore, there is a rapid shift in the treatment of cancer in patient care, where minimally invasive cancer treatment approach is adopted such as image guided cancer treatments with innovative technologies. This aims to preserve organ and provide better patients' experience whilst maintaining the oncological durability such as survival outcome.

As IO is a rapidly evolving clinical discipline in the cancer treatment paradigm, it is crucial that Interventional Radiologists specialised in IO, collaborate in close partnership with other cancer clinical disciplines at the national and global levels in order to influence the anticipated innovative changes within the healthcare system. This shared leadership approach is vital to facilitate the effective change that is required to ensure delivered IO services are evidence based, safe and patient centred.

ABSTRACTS OF PLENARY SPEAKER'S PRESENTATION

Delivering values to the elders

John Rasko AO
Cell & Molecular Therapies, Royal Prince Alfred Hospital, Missenden Rd, Camperdown 2050; Gene and Stem Cell Therapy Program, Centenary Institute; Sydney Medical School, University of Sydney, Australia

It is an exciting time for genetic and cellular therapies. Since 1989 over 1500 Phase I/II studies of direct in vivo and cell-mediated gene therapy in diverse diseases have been completed (1). I will present substantial evidence of improved clinical outcomes demonstrated in haemophilia B, immune deficiencies, haemoglobinopathies, immunotherapies for cancer and blindness. In the field of cellular therapeutics, applications have expanded beyond the foundation in autologous and allogeneic hemopoietic cell transplantation to mesenchymal and other adult cell therapy trials. Indeed, if pluripotent cells can be differentiated ex vivo to recreate and repair mature human tissues and organs then regenerative medicine will become a reality. However embryonic and induced pluripotent stem cells have been mired in controversy and clinical development has been forestalled (2). Medical and, in particular, stem cell tourism has become a billion dollar industry with increasing examples of false claims. Unregulated, untested or unsafe stem cell 'therapies' place the field at a challenging crossroad (3).

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ABSTRACTS OF PLENARY SPEAKER'S PRESENTATION

Development of Cellular Reprogramming and iPSC Technology As Personalized Medicine-based Platform : From Bench to Clinic Bedside

Shih-Hwa Chiou[1,2]
[1] Institute of Pharmacology, School of Medicine, National Yang-Ming University;
[2] Department of Medical Research, Taipei Veterans General Hospital, Taipei, Taiwan 11217

**Corresponding author: e-mail address: shchiou@vghtpe.gov.tw*

The development of induced pluripotent stem cells (iPSCs) has opened a new era for stem cell research. How to quickly, efficiently, and safely produce specific-lineage differentiation from pluripotent-state cells and iPSCs is still an open question. To overcome this critical obstacle, we performed proteomic analysis to find that Parp1, a key factor for DNA repair, plays a crucial role in regulating the efficiency of cellular reprogramming. Furthermore, the generation of patient- or disease-specific iPSCs therefore holds promising potential for the drug industry and regenerative medicine. Following this concept with using iPSC technology, we have reprogrammed T cells from patients with dry type aged macular degeneration (AMD) into induced pluripotent stem cells (iPSCs) via integration-free episomal vectors and differentiated them into RPE cells that were used as an expandable platform for investigating pathogenesis of the AMD and in-vitro drug screening. Moreover, we demonstrated a plasma treated and laminin coated PDMS film that can enhance the attachment, sustain the survival, and facilitate the functional maturation of iPSC-differentiated retinal pigment epithelial cells (dRPE) seeded on it. The dRPE/PDMS-PmL implant was able to enhance the response to light stimuli in vivo. Taken together, our findings provide the pre-clinical examinations for the prospective clinical application of Human iPSCs, including dRPE/PDMS-PmL subretinal implant, in treating aging degeneration diseases like AMD.

Keywords: induced pluripotent stem cells; PARP1; aged macular degeneration.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Taming the KRAS Beast : Orally-administered Immunotherapeutics Against KRAS Positive Colorectal Cancers

*Ng Wee Ren[1], Tan Pei Jun[1], Tan Ee Wern[1], Hoo Pui Yen[1], Siak Pui Yan[1], Teo Yee Mun[1], Ng Teng Jia[1], Adelene Song Ai Lian[2], Raha Abdul Rahim[3], Lim Lay Hong[1], Palanirajan Vijayaraj Kumar4 and Lionel In Lian Aun[1],**

[1] Dept. of Biotechnology, Faculty of Applied Sciences, UCSI University, Kuala Lumpur, Malaysia.
[2] Dept. of Microbiology, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Selangor, Malaysia.
[3] Dept. of Cell & Molecular Biology, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Selangor, Malaysia.
[4] Dept. of Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, UCSI University, Kuala Lumpur, Malaysia.

* Corresponding author's e-mail: lionelin@ucsiuniversity.edu.my

Somatic point mutations of the KRAS gene coding for GTPases downstream of receptor tyrosine kinases accounts for ~40% of all colorectal cancer (CRC) cases, and is the predominant mutated isoform (~86%) amongst RAS family members. At present, therapies primarily targeting EGFR(+) CRCs such as cetuximab and panitumumab have proven ineffective against EGFR(+)KRAS(+) CRCs, while non-specific cytotoxic chemotherapeutic regimes such as FOLFOX and FOLFIRI are often accompanied by negative side effects and mortality-associated risks. Treatment efforts are currently shifting towards immunotherapeutic approaches, of which next generation engineered peptide cancer vaccines known as mimotopes as well as 3rd generation scFv-immunotoxins are rapidly gaining momentum. Here we describe the design, progressive development and evaluation of several immuno-therapeutics capable of targeting codon 12/13 mutated KRAS antigens, with specific focus on CRCs. Alongside these immuno-therapeutics, advancements on an orally-administered gastrointestinal delivery approach using a double microencapsulated lactococcal-based host-vector system with enhanced bioavailability, drug stability, ease of administration, dose control and shelf-life is also described. Preliminary data have thus far shown promising results where shortlisted engineered mimotope candidates with enhanced, antigenicity, solubility and MHC-restriction properties were capable of inducing either T-cell bias cytokine responses or B-cell responses through specific anti-KRAS(+) IgG production in mice.

Acknowledgement: This work was funded by PSIF (UCSI University), FRGS (Ministry of Higher Education) and ScienceFund (Ministry of Science Technology and Innovation).

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

The silent mentor program of Tzu Chi University

Guo-Fang Tseng
Department of Anatomy, College of Medicine, Tzu-Chi University, Hualien, Taiwan

Anatomy teaching started by dissecting criminals and grave-robbed bodies, and in the 20th century mainly the unclaimed. This reflects poor public acceptance to body donation. The lack of transparency of dissection in medical schools and the reluctance of the surviving families further antagonized body donation. Dissection of the unwilled in addition defies medical educational emphasis on the cultivation of humanity and empathy.
Tzu-Chi University in Taiwan started a humanistic-based curriculum by integrating interaction with families into anatomy teaching in 1996. Students learned of the donors and families before classes. Families and trainees joined ceremonies at the beginning and end of the dissection. Donors were taken as altruistic role models. This better motivated students' learning, heightened the significance of anatomy teaching to a level of altruistic mentoring and cultivation of empathy. It in addition, comforted families and positively promoted body donation.

Integrative Ayurveda (The Evolution of a 10,000-year-old science)

Jeythevan Partiban

It is believed that AYURVEDA is the world's oldest and the most comprehensive healthcare system. This talk will focus on presenting the basic universal principles that governs the science and geared towards giving clarity to all attendees on how compliance and adherence to its time tested principles of healing can be the road map to SUSTAINABLE GOOD HEALTH & WELL – BEING especially for the ELDERS in line with INAUGURAL FMHS Scientific Meeting 2017.

HIGHLIGHTS
AYURVEDA SYMPLIFIED
This ancient science will be dissected and presented in a simplified manner with special attention on "DOSHA ANALYSIS" so that all attendees can clearly understand, embrace and benefit from the world's oldest medical system

MENTAL HEALTH FROM AN AYURVEDA PERSPECTIVE
The Modern medical approach differs from the way AYURVEDA's view and treats mental health. A quick comparison between both approaches will be presented to the attendees.

"DELIVERING VALUES TO THE ELDERS" >> Integrative Healthcare VS FIRE FIGHTING MODEL
A forward look towards creating a more comprehensive healthcare plan for the elderly that lowers medical cost, increases efficacy of treatment and improves the overall quality of one's life.

INTEGRATIVE HEALTHCARE MODEL >> THE WAY FORWARD
The integrative healthcare model practiced by THE SAMKKYA AYURVEDA HEALTHCARE Group for the past 14 years has proven to be highly beneficial to the thousands treated over the years in all our centers. This integrative model has proved to be effective, sustainable & affordable. A Brief overview of our integrative healthcare model will be revealed.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Preconditioned Mesenchymal Stem Cells Alleviate Bleomycin-Induced Pulmonary Fibrosis

Ying-Wei Lan[1], Si-Min Theng[2], Kong Bung Choo[3], Kowit-Yu Chong[1, 2, 4]

[1] Graduate Institute of Biomedical Sciences, Division of Biotechnology,
[2] Department of Medical Biotechnology and Laboratory Science, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, Republic of China
[3] Department of Preclinical Sciences, Faculty of Medicine and Health Sciences and Centre for Stem Cell Research, Universiti Tunku Abdul Rahman, Selangor, Malaysia
[4] Department of Thoracic Medicine, Chang Gung Memorial Hospital at Linkou, Tao-Yuan, Taiwan, Republic of China

Idiopathic pulmonary fibrosis (IPF) is a progressive diffuse parenchymal lung disorder of unknown etiology. Mesenchymal stem cells (MSCs)-based cell therapy is a novel approach with great therapeutic potentials for the treatment of lung diseases. Despite demonstration of MSCs grafting, the populations of engrafted MSCs have been shown to decrease dramatically 24 hours post-transplantation due to exposure to harsh microenvironments. Strategies to improve the cytoprotective abilities and also enhance the anti-inflammatory, anti-apoptotic and anti-fibrotic effects in transplanted MSCs are needed. Hence, preconditioning approaches are thought to enhance the therapeutic potency and duration of the survival of engrafted MSCs. To accomplish this hypothesis, we aimed to establish and study the protective effects of two different preconditioned strategies of MSCs, which were hypoxia preconditioned -MSCs (HP-MSCs) and oncostatin M preconditioned-MSCs (OSM-MSCs), in vitro and in the bleomycin-induced pulmonary fibrosis mouse model. Our results showed that gene expression levels of prosurvival, anti-apoptotic, anti-oxidant and growth factors were upregulated in HP-MSCs. OSM-MSCs were shown to overexpress type 2 OSM receptor (gp130/OSMRβ) and exhibited high susceptibility to OSM, resulting in upregulation of the paracrine factor, hepatocyte growth factor (HGF). Furthermore, on intratracheal instillation of the manipulated MSCs into bleomycin-induced pulmonary fibrosis mice at day 3, the pulmonary respiratory functions significant improved for up to 18 days of MSCs treatment. Expression of fibrotic factors was all down-regulated in the lung tissues of the treated mice. Our data demonstrated that upregulation of HGF possibly plays an important role in mediating the therapeutic effects of transplanted preconditioned-MSCs.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Endocrinology & Aging

Nor Azmi Kamaruddin
Department of Medicine, Faculty of Medicine
National University of Malaysia (UKM)
Kuala Lumpur

The 3 principal hormones that increase during puberty, remain elevated in adult life and finally decline with aging are growth hormone (GH), testosterone and oestrogen.
Levels of both GH and its by-product, insulin-like growth factor-1 (IGF-I) are halved in the elderly compared to the young. Numerous studies have evaluated the effects of using recombinant GH, GH-releasing hormones (GHRHs) or GH secretagogues such as ghrelin to increase the levels of GH in healthy older individuals to levels that match those in healthy younger people. In effect, all of these trials produced similar results. Body composition was improved; muscle mass was increased; fat was decreased; and bone mass was increased. However, to date, there's no convincing evidence that GH actually benefits in terms of improving key clinical outcomes. For instance, studies do not show that it prevents cardiovascular disease or diabetes; that musculoskeletal weakness is improved; that people perform daily activities better; or that health-related quality of life is enhanced in older people.

Testosterone on the other hand falls by 1% to 2% per year after the age of 30 and continues to do so until death. There is however, a reciprocal increase in the sex hormone-binding globulin resulting in relatively higher levels of total testosterone compared to free testosterone. The percentage of men with total testosterone level below the young reference range is about 30% at age 70 while the percentage of men with free testosterone levels below the young healthy male reference range is greater than 50% at age 70.

Many men tested may actually have low testosterone but it is more often secondary to other medical conditions such as obesity, diabetes, hypertension and sleep apnea, all as a result of hypothalamic suppression of the gonadal axis. By merely addressing these individual problems will allow testosterone levels to return to normal.

The current data suggests that the benefits of testosterone therapy in older men are modest. Although improvements in muscle mass and strength have been demonstrated, only a few trials have shown improvement in actual physical function. Similarly, testosterone therapy improves bone mass, but there are no data that it reduces the incidence of fractures. Even improvement in sexual function has been modest compared with younger hypogonadal men on replacement. Not only are the benefits modest but the risks of testosterone therapy in older men remain uncertain. Polycythemia is the most commonly encountered adverse effect together with potential cardiovascular and prostate complications that remain unanswered.

Since studies have shown that older men who are healthy and fit maintain normal testosterone levels, promotion of healthy lifestyle and treatment of co-morbidities should be prioritised as it has been shown to slow testosterone decline with aging.

GH and testosterone are often marketed as "anti-aging" agents but these claims are commonly based on dubious studies. The problem mainly lies with the so-called anti-aging movement whose approach to normal aging is that it is a disease that has to be stopped at all cost.

For women, the endocrinology of aging is similar to that of men in that they experience the same gradual declines in GH and testosterone. Oestrogen levels also decrease, but they drop more quickly around the time of menopause. Unlike men, much more is known about menopausal hormone therapy, particularly with oestrogen.

Without doubt the most significant endocrine organ to have an effect on age-related morbidity and mortality is the pancreas. Insulin secretion is known to decline with ageing, falling by as much as 0.5% annually. A drop in both the number of pancreatic islet β cells and their function, occurring independently of peripheral resistance to insulin contributes to the elderly population's susceptibility to diabetes.

It has been shown that 11β-hydroxysteroid dehydrogenase type 1 (11βHSD1), which converts the inactive steroid cortisone to its active catabolic product cortisol, increases in activity during the ageing of adipose tissue, bone, skeletal muscle, skin and the central nervous system. This local glucocorticoid excess, occurring in the presence of normal circulating levels of cortisol, may very well be responsibled for conditions such as abdominal obesity (insulin resistance), osteoporosis, sarcopenia, skin atrophy, cognitive and memory decline associated with aging.

Anti-Dengue Activity of Traditional Chinese Medicinal Plants

Maqsood Maryam[1], 2, Kian-Keong Te[3], Fai-chu Wong[4], Tsun-Thai Chai[4], Gary Low Kim Kuan[5], Seng Chiew Gan[6], Hui-Yee Chee[1].

Affiliations :

1. Department of Medical Microbiology and Parasitology, Faculty of Medicine and Health Sciences, University Putra Malaysia Serdang 43400, Selangor, Malaysia.
2. Department of Microbiology, Faculty of Natural Sciences, SBK Women's university Quetta 87300, Balochistan, Pakistan.
3. Department of Traditional Chinese Medicine, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Sungai Long Campus, Selangor, Malaysia.
4. Department of Chemical Science, Faculty of Science, University Tunku Abdul Rahman, Kampar Campus, Perak, Malaysia.
5. Department of Population Medicine, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Sungai Long Campus, Selangor, Malaysia.
6. Department of Pre-Clinical Sciences, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Sungai Long Campus, Selangor, Malaysia.

Introduction :
Dengue virus (DENV) is emerging as a major virus spread by mosquito. Recently it has spread to more than a hundred countries around the globe and still lacks a specific treatable medication. Many Traditional Chinese Medicines (TCM) plants are in practice for dengue fever in dengue endemic regions of the world. Research can help TCM practitioners identify the anti-dengue potential of the plants in clinical practice.

Methodology :
Twelve TCM plants aqueous extracts described as cool herbs used for the diseases with high fever were evaluated for their anti-dengue potential. Lead plants were established through detailed in vitro foci forming unit reduction analysis against all four serotypes and were validated through quantitative real time RT-PCR.

Results :
Four plants were potentially inhibiting the virus in primary phenotypic in vitro evaluation. Two lead plants Dryopteris crassirhizoma (DC) and Morus alba (MA) were identified with IC50 values 130ug/ml and 221ug/ml respectively and the Selectivity index (SI) were 4.21 and 4.62 respectively. These two were tested against all four serotypes of DENV and were found equally inhibiting all. Whereas, qRT-PCR RNA copy number reduction analysis suggested DC to have more anti-dengue activity than MA.

Conclusion :
DC is identified as potential anti-dengue plant and can be made available for the future studies to help TCM practitioners. MA is also inhibiting but the dose is very high so it can be considered as potential anti-dengue but further investigation is required to improve its activity.

BREAST CANCER IN ASIAN WOMEN: from germline mutations, to somatic mutations to improving survivorship

Soo-Hwang TEO
Cancer Research Malaysia, Subang Jaya, MALAYSIA
University Malaya, Kuala Lumpur, MALAYSIA

Breast cancer is the most common cancer globally and in Malaysia, breast cancer incidence is projected to increase by 49% from 2012 to 2025. Unfortunately, survival from breast cancer is the poorest in the Asia Pacific region, with only 49% of women surviving more than 5 years. In my talk, I will describe what we know about genetic predisposition to breast cancer and the possibilities that this may be used for stratifying risk so that we can offer screening and prevention to women at highest risk. I will describe what we know about genomics of breast cancer in Asian women and how this may be useful in personalized medicine. Finally, I will describe how improving survival involes more than just laboratory based research and initial data from our nurse-led patient navigation programme.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Fibroblast growth factor receptor 4 (FGFR4) and fibroblast growth factor 19 (FGF19) autocrine axis in breast cancers

Chee-Onn Leong[1,2]

[1] Center for Cancer and Stem Cell Research, International Medical University, Bukit Jalil, 57000 Kuala Lumpur, Malaysia.
[2] School of Pharmacy, International Medical University, Bukit Jalil, 57000 Kuala Lumpur, Malaysia.

The significance of fibroblast growth factors (FGFs)/fibroblast growth factor receptors (FGFRs) signaling deregulation in breast cancers has been documented in several studies. However, the specific role of FGFR4 in breast cancers pathogenesis is not fully elucidated. Using a human kinome RNAi library screen, we show that knock-down of endogenous human FGFR4 induces significant tumor-specific cell death in breast cancer cells. Further analyses reveal that FGFR4 mediates cancer cell survival predominantly via activation of PI3K/AKT, as knock-down of endogenous FGFR4 in MDA-MB-468 and HCC1937 cells significantly reduced AKT phosphorylation while ectopic expression of a constitutively active myristoylated AKT completely abrogates the apoptosis induced by FGFR4 depletion. Interestingly, both MDA-MB-468 and HCC1937 also secrete fibroblast growth factor 19 (FGF19), a canonical ligand specific for FGFR4. siRNA-mediated silencing of FGF19 or neutralization of extracellular FGF19 by anti-FGF19 antibody (1A6) decreases AKT phosphorylation and suppress the growth of the FGFR4+/FGF19+ MDA-MB-468 and HCC1937 cells. While no such effects were observed in the FGFR4+/FGF19- MCF-7 cells nor in the FGFR4-/FGF19+ MDA-MB-231 cells. Consistently, FGFR4/FGF19 co-expression was also observed in 82 out of 287 (28.6%) primary breast tumors, and their expression is strongly associated with AKT phosphorylation and Ki-67 staining. In summary, our results demonstrated the presence of an FGFR4/FGF19 autocrine signaling which mediates the survival of a subset of breast cancer cells and suggest that inactivation of this autocrine loop may potentially serve as a novel therapeutic intervention for future treatment of breast cancers. investigation.

High Quality Protein in Active & Healthy Aging

Ms Jennifer Wu Mei Hsia
Pharm-D Sdn Bhd

Age-related physiological changes, together with a reduction in lean body mass, basal metabolic rate, overall physical activity and mental disorders that occur with aging – all contributes to the lower protein intake in older adults. Current recommendation for protein intake by WHO/FAO/UNU experts is a RDA of 0.8 g/kg BW/day. However, this one-size-fits-all protein recommendation is insufficient to meet the increased needs of age-related changes in terms of protein metabolism, immunity, hormone levels, and progressing frailty in older adults. Hence, the 2014 ESPEN Expert Group has made a new recommendation for protein requirements: (a) for healthy older adults (>65 y/o), the diet should provide at least 1.0-1.2 g/kg BW/day, (b) for older adults who are malnourished or at risk of malnutrition secondary to acute illness or chronic long term condition, the diet should provide 1.2-1.5 g/kg BW/day, (c) with even higher intake for individuals with severe illness or injury. Studies have shown

that older adults who consume higher protein maintain muscle mass and grip strength. Muscle protein is directly affected by protein intake in the diet. The PROT-AGE study group also recommends 1.0-1.5 g/kg BW/day in those aged >65 years, with or without the presence of disease. In addition, the quality of protein consumed shows an influence on protein synthetic response. Penning et al 2011 showed that whey protein stimulated postprandial muscle protein accretion more effectively than casein in older men – an effect that is attributed to a combination of whey's faster digestion and absorption kinetics and higher leucine content. In conclusion, adequate protein intake and continuing exercise are important to active healthy aging and longevity.

ROUTINE PHYSICAL PERFORMANCE MONITORING IN OLDER ADULTS : THE WAY TO GO

Associate Professor Dr Devinder Kaur Ajit Singh

There is a need to perform routine physical performance monitoring among older adults for early detection of impairments and implementation of prevention strategies. The aim of this session is to provide an overview of the physical performance data among Malaysian older adults. Information about robust physical performance measures, performed safely and correctly to monitor functional mobility, strength and flexibility will also be discussed. It is hoped that these evidence based information will motivate and enable clinicians to integrate routine physical performance monitoring in the management of older adults. Prevention of physical performance deterioration is empirical with the ultimate goal of maintaining functional independence as long as possible among older adults.

Contemporary Care for Elderly with Cognitive Impairment

Tan Hongyun[1]
Nursing service, Tan Tock Seng Hospital, Singapore

With the increasing aging population, it is expected the raise of numbers of elderly with cognitive impairment. Cognitive impairment is one of the common geriatric syndromes, and one of the common causes of cognitive impairment is dementia. Dementia is a progressive neurodegenerative disease with significant complications, such as memory and function decline, behavior and psychological symptoms of dementia, and caregiver stress. Empower the frontline nurses to recognize and screen for cognitive impairment will help to prepare the healthcare worker and caregivers to address these potential issues earlier. Specific training on behavior management for nurses may help to reduce the burden of behavior issue and improve the care quality for the elderly with dementia and behavior issue. Enhancement of advanced dementia care is equally important, both in hospital setting and community setting. The collaboration of geriatric and palliative expertise will help to provide holistic care towards patients with advanced dementia. Nevertheless, advanced care planning (ACP) should be an integral part of dementia care for all patients, as ACP will help to

define the goal of care and facilitate end of life care planning. In conclusion, with the rising of elderly patients with cognitive impairment, healthcare need to transform the care delivery process and services to accommodate the unique needs of patients with cognitive impairment, especially dementia.

Urinary Incontinence in the elderly from long term care homes within the Klang Valley: A study on prevalence, types, risk factors and the perception towards quality of life.

Choo Peak Yean, Department of Nursing, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Sg. Long

Urinary incontinence (UI) is reported to be a common problem among the elderly. However, the exact prevalence of UI is not known in Malaysia as the elderly do not report as they treat this as a normal aging process. Therefore UI is often undiagnosed and not treated. Moreover, elderly staying in the long term facilities are often illiterate and are therefore less likely to have knowledge on UI and its management. The objective of this descriptive cross-sectional study is to obtain background data to determine the prevalence of the different types of UI, their underlying risk factors and the perception of UI towards the quality of life in this group of marginalized elderly. Data collection includes face to face interview and measurements to assess socio-demographic data, perception of UI towards quality of life (QoL) and to assess the risk factors that may cause UI in the elderly. Following the preliminary questions, the elderly will be asked specifically on the types of UI using the Questionnaire for Urinary Incontinence Diagnosis (QUID) and the impact on quality of life by using the WHO QoL BREF questionnaire. Preliminary result showed that about 13% of the elderly in long term care homes in Klang Valley has some form of incontinence. However, the number could be higher as some of the elderly may feel embarrassed to report during interview. Further interview need to be conducted to assess the prevalence and types of UI among the elderly.

Mesenchymal stem cells and their application in articular cartilage regeneration: from research to clinical application

Pan Pan Chong[1], Wan Nor Hanis Wan Ahmad[1], Havva Dashtdar[1], Ponnurajah Panjavarnam[1], Liang Xin Tay[1], Terence Tay[1], Chee Ken Chan[1], Lakshmi Selvaratnam[2], Azlina A. Abbas[1], Azhar M. Merican[1] and Tunku Kamarul[1]*

[1] National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia.

[2] *School of Medicine & Health Sciences, Monash University, Sunway Campus, 46150 Bandar Sunway, Selangor, Malaysia.*

** Correspondence to: Pan Pan Chong; e-mail: pan2chong@gmail.com*

The ability of cartilage to undergo self-repair as the result of an injury is limited due to the absence of neurovascular supply. This issue may be overcome by the presence of progenitor cells within this tissue. However, it is well-established facts that cartilage is known to be deficient of undifferentiated stem cells. To compound the problem further, the principal cells in mature cartilage (also known as chondrocytes) have limited proliferative ability due to the physical restrictions created by the surrounding environment. To avoid the problem of limited tissue regeneration, the potential of mesenchymal stem cells (MSCs) to be employed in biological therapies for cartilage regeneration has recently generated much interest in the challenging arena of repairing damaged joint cartilage. This project focused initially on isolation and expansion of adult MSCs derived from bone marrow and peripheral blood, followed by inducing chondrogenic differentiation in vitro. Subsequently, such MSCs and MSC-driven chondrocytes were fully characterised prior to embedding in biocompatible alginate scaffolds and then transplanted into surgically created cartilage defects in knee joints of animal models. This project was further conducted to investigate the plausible mechanism of osteoarthritis by determining the interplay of hyaline cartilage loss and subchondral bone changes in the patients with established knee osteoarthritis, followed by the evaluation of the biosynthesis of isolated osteoarthritic chondrocytes to varying dynamic compressive strain and loading duration. Based on data arising from the animal study, similar protocols were adapted for implementation in clinical trials involving suitable screened patients with articular cartilage lesions to undergo repair through autologous MSC transplantation. Five patients (age <45 years) with focal cartilage defects received autologous chondrocyte implantation and followed up for 36 months. Moreover, the autologous MSC based-clinical trial will be carried out using the newly accredited Good Manufacturing Practice (GMP) laboratory at the National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya.

Developing Human Resource Capabilities for the Traditional and Complementary Healthcare System

Dr. Goh Cheng Soon

Globally, more countries have gradually come to accept the contributions that traditional and complementary medicine (T&CM) can play in the health and well-being of individuals and to the comprehensiveness of their health-care systems. Hence, with the increasing popularity of the T&CM and its service provision in Malaysia, the development of the human resource capabilities for T&CM is mandatory to ensure safe and quality healthcare services.

The presentation will explore the objectives of the T&CM Act 2016 (Act 775) and its impact on the T&CM graduates. For better understanding, several related sections of the Act will be illustrated and

emphasised. To reinforce the cultivation of T&CM human resources, a list of accredited T&CM educational programmes and institutions will be shared. Collaboration with relevant stakeholders to educate and professionalise T&CM graduates is essential.

In order to satisfy the demand of diversified development in T&CM and elevate the quality of cultivation, the Malaysia Government has strengthened the cooperation with the country of origin such as China for Traditional Chinese Medicine and India for Traditional Indian Medicine.

Ageing In Malaysia – Exploring the Opportunities and Challenges

Noran N Hairi

Julius Centre University of Malaya, Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, 59100 Kuala Lumpur

The world's population is ageing. Never before has the world population seen as many older people as it does today. At present, developed nations are experiencing relatively little change in the increase in older people as compared to the developing nations (middle income and low income countries. Malaysia is an example of such a population. In 1991, there were 1 million older people, representing 5.8% of total population. In a period of two decades, this figure more than doubled; 2.2 million older people comprised 7.7% of total population. By 2030, there will be more than 4.9 million people or 12% of Malaysia's population aged over 60 years old, making our country an aged nation. Longevity means there would be a vast increase of valuable resource and net contributors to our society as there would be older people who continues to work, who volunteer their time, who help care for their grandchildren and who are able to share their values with the younger generations. Nevertheless, the extent of these opportunities that arise from these extra years of life will be heavily dependent their health and wellbeing. Thus the concern about older people's health, the rise of non-communicable diseases, the need for healthcare providers and facilities to adapt to the increase of older patients; the existing social services that are not in line with the change demographic transition and changes in social structure as well as minimal laws and legislations looking after our older people are some challenges that needs to be looked into urgently. This talk explores the many opportunities and concerns that an ageing population will bring to Malaysia and possible strategies of how these issues may be addressed by changes in behavior and public health policy.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Care of the Elderly

Dr Tan Maw Pin

The Asian Civilization holds strongly and proudly on to their culture of filial piety. In Asian societies, the younger persons are expected to revere and obey their elders while the older generation expects to be served and waited on. However, the interpretation of respect for our older population needs to be carefully considered, particularly in the face of the ageing population. With rapid population ageing, the proportion of population aged 60 years and over have now exceeded 9% of the total population today, and is set to rise to 15% by 2035 when we cross the line for aged nation. This has happened due to reduced fertility as well as prolonged life expectancy, and what this means is that there will be fewer and fewer children looking after more and more older people. Therefore, has our nation's policy for older people, which states that responsibility of care for older persons rest with their children, not doomed to failure? Consequently this has policy has paradoxically harmed our nation as this rather arrogant assumption that adult children will care for their older parents has also allowed our government to shy away from their responsibilities of developing services for older persons. Let's get real! This does not mean re-examining our values so much as to re-examining the interpretation of filial piety. Our values should hold, but filial piety should not be the responsibility of adult children alone but society. This talk will examine how we can truly value our elders and deliver to them what they truly deserve. We should seek to enable not disable and empower not take over, in order to enrich the lives of all generations.

Inflammatory Infiltrate in the Tumour Microenvironment – Friend or Foe?

Yaw-Chyn Lim, PhD

The inflammatory and immune cells within the inflammatory infiltrate present in many tumours are now recognized to be important contributors to tumorigenesis and disease progression. Malignant cells have evolved mechanisms to induce an immunosuppressive tumour microenvironment that allows evasion of immune surveillance. The cross-talk between the inflammatory infiltrate and the tumour cells is important for maintaining tumour cell survival and for facilitating metastasis. The composition of the inflammatory and immune infiltrate is also shaped, in part, by tumour derived factors which either act as chemoattractants to directly attract leukocytes or as modulators of endothelial function.

This presentation will focus on how malignant cells modulate cellular functions within the tissue microenvironment. We will present our findings on how malignant cells in Hodgkin's Lymphoma may modulate endothelial function locally to induce T cell recruitment; and how breast cancer cells facilitate metastasis to a target organ, the lung. Finally, we will share some of our exploratory data on using nanoparticles to target immune cells to tumour sites.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Managing Challenging Behaviours in Dementia

Asrenee Ab Razak
Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia.

Dementia is one of the neurodegenerative disease that causes deterioration of cognitive functions which lead to personality change. As the disease progresses, a person with dementia may develop behaviours that can be challenging. Behaviours such as aggression, restlessness, sleep disturbances and psychotic symptoms can be distressing, especially to the carers. Various reasons contributing to these behaviours including the direct causation of the brain neurodegenerative process, the ailing health conditions or rooting from the environment or social interactions. While there are roles of pharmacotherapy in curbing these behaviours, the side effects limit their usage. It is recommended to first use non-pharmacological approaches in dealing with these challenging behaviours. These approaches, however can be taxing to the carers. Therefore, it is crucial to tease out issues of challenging behaviours in dementia and ways to deal with these behaviours in order to improve the quality of life of the person with dementia.

Keywords: Dementia, behaviour and psychotic symptoms of dementia (BPSD)

Probiotics and Blood Glucose Management: Does it work?

Barakatun-Nisak Mohd Yusof, PhD
Department of Nutrition & Dietetics, Faculty of Medicine & Health Sciences, Universiti Putra Malaysia

Interest in probiotics at an all-time high, driven in part by the emerging findings on the connection between gut health and chronic diseases in particular diabetes. Probiotics can be defined as live microorganism which administered in sufficient amount can extend to their host the health benefits. While the beneficial roles of probiotics are well studied in improving immune system function and preventing diarrhoea, its role in blood glucose management is unclear. However, the evidence is available that gut microbiota composition in diabetic differs from non-diabetic individuals leading to highlight the potential use of probiotics as added therapy in managing blood glucose control. This presentation brings the attention on the connection between gut microbiota and diabetes. The effectiveness of probiotics for the management of diabetes from the randomised controlled trials will be reviewed and compared with our experience among Malaysian patients with type 2 diabetes.

"How Can We Help The Elderly?"- A Physio Way

Puan Julaida Embong

The taking care of vulnerable elderly people can be very challenging as they are physically frail, comes with multiple disease and poly pharmacy. Every elderly patient may have different physical disabilities, social backgrounds and comorbidities, therefore the care provided should be individualize. The care giver should focus on patient functional, emotional, and economic support. Many times these approaches are achievable with multidisciplinary approach.'

The Role of Gyneacology of Traditional Chinese Medicine for Peri-menopause and Post-menopause Women

Puan Susuana Kuek Binti Kamal Kuek

With the living pressure and pace of life rise accelerately, the incidence of perimenopause syndrome and even syndrome which are similar to perimenopause such as premature ovarian failure(POF), diminish ovarian reserve(DOR) are increased. These incidence not only happen in the aging population but also in any age of women, especially in women of child- bearing age.

Ovarian hormones deficiency or dysfunction and the dysfunction of neuroendocrine immune function are seen as the basic symptoms of those perimenopause syndrome. Presently, hormone replacement therapy is the main therapeutic method in all over the world, but unfortunately the side effect such as possibility of cancer and contraindication limited its clinical application.

Comparing with the HRT, benefits and effects of Traditional Chinese Medicine therapy is more remarkable and its side effects are lesser. It has been revealed that TCM therapy can delaying the aging progress by improving the ovarian functions.

Observation 1:
PART 1
Object: the effect of herbal formula GengNianChun(GNC) on Neurotransmitters, Cytokines ,Leptin and Endometrial thickness of ovariectomized rats.
Conclusion :Herbal formula GengNianChun(a Chinese herbal prescription) regulate the secretion of hypothalamic neurotransmitters, regulate the lipid metabolism and improve the immune function but not increase the endometrium thickness of ovariectomized rats.

PART 2
Object: the effect of herbal formula GengNianChun(GNC) on learning and memory ability on ovariectomized rats and to explore the mechanism of GNC in nervous system.
Conclusion: Castration will decline the learning and memory ability; GNC can improve the learning and memory ability of ovariectomized rats and its effectiveness is similar to estrogen;GNC will decline the learning and memory ability of uncastrated rats.

Observation 2 :
Object: Observe the effect of acupuncture combined with moxibustion on serum sex hormone levels (follicle-stimulating hormone (FSH), luteinizing hormone (LH), estradiol (LH), estradiol (Estradiol, E2)) and related menstrual conditions of POF patients.
Conclusion: Acupuncture combined with moxibustion regulate hormone levels, reduce the FSH level and the ratio of FSH and LH ,menopausal symptoms been improved significantly.

CONCLUSION AND DISCCUSION
According to the theory of TCM, the physiological recession of women are start from 35-year-old, is 10 year early than the perimenopausal age we had definite before. Based on those research which had done or on-going, the prevention treatment of TCM for women aging problems ,perimenopausal syndromes ,postmenopausal syndromes or even ovarian functions decline or dysfunction can be start early and accordingly to individual differences. Either herbal formula or others treatment of TCM can prevent and delay women aging .Traditional Chinese medicine play an important role in improving the health of women who are menopausal and postmenopausal.

Essence of Chicken as a Natural Functional Food for Health Prevention

Dr. Sherry Wang Xueying

Do you know that that more than 300million people in Asia Pacific are going to be aged 65 and above by 2020, and nutritional/health supplement is increasingly being used in conjunction with sensible diet and lifestyle for maintaining good health since young to complement our active lifestyle?

Amongst many nutritional/health supplement, Essence of Chicken (EOC) has been widely consumed in Asian populations, particularly in South East Asia. It is prepared through meticulous and proprietary extraction process from chicken meat. But there is only one clinically proven EOC that has been shown multiple health benefits including alleviating fatigue, enhancing focus and concentration, as well as promoting recovery from exercise and illnesses. In this talk, anecdotal and cumulative evidence on the efficacy of EOC will be shared and the relevance of this EOC to be used as a health food to address some health issues in our modern life and complement our ever increasing active lifestyle will be discussed. Benefit of EOC with Cordyceps will also be mentioned in this talk.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Perspectives of Aging across Cultures and Ages

Yap SF, FMHS, UTAR

Definition of Aging

What is old age? What does the process of aging consist of? There is no single answer to these questions. Lansing, an American gerontologist describes old age as "a process of unfavourable, progressive change usually correlated with the passage of time, becoming apparent after maturity, and terminating invariably in death of the individual". This definition is description of ageing as a biological phenomenon. The simplest albeit arbitrary definition is chronological age, a notion of the modern age, is generally accepted as 60 or 65 years of age. This definition is applied to determine the retirement from formal occupation and the eligibility for payment of pension. A third dimension of aging is sociological aging which refers to the changes in a person's roles and relationships within the family and society. This view is influenced by the perception on of aging and the culture of the society in which the person lives.

The Study of Aging: Geriatrics coming into Being

The phenomenon of aging have been a topic of enquiry since antiquity. The Greek philosopher Hippocrates (460-377BC), who is also known as the "Father of Medicine", and Aristotle (384-322BC) produced the first treatises on old age and illness. Their thoughts were consolidated into the "humoral theory of aging" by Galen (129-200AD) and later by Ibn Sina (980-1037AD), one of the most outstanding and influential Persian philosopher and physician. Other prominent figures who wrote about old age from the health perspective include Francis Bacon, Morgagni and Benjamin Rush. Bacon rejected the humoral theory of aging and proposed the concept that aging is "a decline of the body in old age as a result of unequal repair to different parts of the body". He further proposed a scientific programme of epidemiological investigations into the longevity of people living in different places and under different conditions ("Prolongation of Life, 1632). Morgagni observed and pointed out that illnesses in old age, especially chronic ones can remain asymptomatic for a long time (1761), the basis for much research some 200 years later! Rush struck the last blow to the humoral theory and instead pointed out that old age by itself is rarely if ever the sole cause of death. However, it was the proposal that the study of old age be a special area of study in medicine (Charcot, 1881) that set the stage for the discipline of "Geriatrics", a term coined by Nascher, who is the acknowledged father of geriatric medicine.

The Status of the Aged across Societies and Cultures

Aging in Preindustrial Societies

The status of older people within the family and society is conditioned by numerous complex and interrelated factors. These include the prevailing social and/or political system, economic conditions, cultural norms and traditions, and environmental conditions on the one hand, and the perceived value and usefulness of the elderly persons within the family and society on the other. These conditions vary significantly over time spanning the pre-historical, historical and modern eras of human societies. The communities that existed over these time spans include primitive groups and tribes that depend on hunting and foraging for their subsistence, semi-nomadic groups who are herders of "domesticated" animals, sedentary groups who engage in farming, agrarian and handicraft societies who settle in villages and towns, all of which can be categorised as preindustrial societies.

In the most primitive and impoverished societies, concern, care and security for the feeble and aged is minimal at best. It is also in such societies that stories of wilful abandonment and involuntary senicide are rife. As livelihood become more assured and residence more permanent, care and consideration of the elderly by the members of the family and the group become more of a norm. Such behaviour is to a large extent culturally conditioned and "enforced" by customs, tradition and social mores, and, in contemporary society, by law and legislation. Nevertheless, even in more stable and established societies, under dire circumstances for survival such as widespread famine and other natural catastrophes, the abandonment of the old for the welfare of the younger members of the group is not uncommon.

Culturally derived securities for the aged include cultural norms that obligate family members to care for, respect and obey their parents, the assignment of property rights in the hands of heads of households who are by default the elder within the family, last words and testaments of old people being binding commitments for the children, and the practice of filial piety and ancestral worship that is the core of some cultures. These considerations aside, older people who are able to contribute positively to the family and society are more likely to have more old age security as "there is no better ties that bind the old to the young than mutual interest".

Another consideration when discussing the welfare of elderly people within a society is the social structure of that society and the place of the elderly within that system. An example is the feudal system that operated in the medieval times in Europe and England. The fate of the "Lord of the Manor" is surely at one end of the spectrum compared to the peasant who farm his land! This underlies the power of authority, position and material possessions in securing the respect and care from household members and kin, a situation that exists till today.

Aging in Contemporary Societies

The industrial revolution and the age of modernism has brought with them improvement in global economy and greater quality of health care, resulting in increased lifespan of man overall. This has resulted in the challenge of an increasingly aging population for the modern society, particularly in the developed Western societies. In Asian societies, this issue is also proving to be a concern for India and China, countries with over a billion people accompanied by an increasing proportion of elderly people.

Confounding this issue is the changing values of the younger generation with respect to the family institution. In most Western societies, living with the older generation is not the norm; the young are encouraged to be independent and live on their own. Further there is the prevailing culture of individualism and achievement as a measure of success. The care of the aged is relegated to the old people themselves or to the state. A similar trend has also taken hold among the young in Asian nations due to various social forces. This has prompted governments to devise different approaches to handle the challenges of an aging population. A case in point is China where a three pronged approach involving family (requirement by law for children to care for their parents), community (young oldsters helping older oldsters) and the government (publicly funded retirement homes and services) has been introduced. Whether such initiatives prove to be successful in addressing the problems of an aging population is speculative at best. Hence there is an urgent need for the global community to come together to find the optimal path forward.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

Psychosocial issues in care of the Elderly

Dr. M Parameshvara Deva, senior Professor of Psychiatry, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Sg. Long, Selangor.

There is growing concerns that the ageing process of the populations of many countries and communities is not being understood, misunderstood and poorly addressed with unfortunate effects for the young, aged and administrations. Recognition of the needs of the elderly from social, physical, psychological to economic, medical and special needs is still at the rudimentary stage in the low to medium income countries. Illnesses that affect the elderly are not addressed early and prevention is left to the ad hock measures that may not be evidence based. Disabilities that are preventable are left to courses of nature and physical facilities needed for them are often beyond the reach of the elderly or their families. Psychosocial dynamics of families that change with time are not recognised or catered for adequately.

This paper addresses the ways in which the individual, the family and society can be educated to [provide better care for the elderly in our fast changing world.

Forensic DNA Profiling : Myths, Challenges and Critical Issues

Dr. Seah Lay Hong, Dept of Chemistry Malaysia, Kuching

There is concern whether the exaggerated portrayal of forensic science in crime television shows influences public perception. Rapid advancements in forensic DNA technology has resulted in its increasing use to resolve crime cases, particularly in the detection of low-level DNA traces. This has been made possible by the increasing sensitivity of STR typing kits. Low-template DNA analysis requires careful consideration of the derived stochastic variations that lead to heterozygote imbalance, allele drop-out and increased detection of sporadic contamination. The relevance of the evidence and the probative value of the DNA profile are important issues in the evaluation of forensic evidence.

ABSTRACTS OF INVITED SPEAKER'S PRESENTATIONS

The origin and conceptualisaton of i • Silent Mentor Program in Malaysia

Kin-Fah Chin, Academy For Silent Mentor

" I voluntarily donate my body for the good of others". This is a great wish for an i • Silent Mentor, a good person who holds a good thought and does a good deed for public good with no borders.

When life ends, you could not only return onto earth, but cross borders to become a silent mentor of a medical academy, an independent not-for-profit learning institute with the sole purpose of fulfilling the great wishes of our i • Silent Mentors. Regardless of the religious beliefs of our silent mentors, the teachers, the students and the Academy will pay the utmost gratitude, respect and love. Not only do they pledge to donate their bodies, they also prepare to share their life stories as a teaching tool for liberal arts and humanity education. Upon signing the pledge on the Academy For Silent Mentor Pledge Stone, they reaffirm the core values of i • Silent Mentor – Truth, Goodness and Beauty. Thus begins a new milestone in their life journeys and they will live and breathe in the present moment. Each breath they take, each moment they live, they will transform their mind towards a happy and beautiful moment with love. Love thy neighbours, they selflessly and self willingly contribute to society by doing a final good deed - donating their bodies with an altruistic love. In essence, they will leave with good thoughts, a peaceful mentality and the righteous sense of doing a virtuous deed for the betterment of society. In Academy For Silent Mentor, it does not stop with pledging. The day you pledge, the Academy is committed to provide you a platform for transforming your mind, transforming your life and transforming your future.

The Role of Indian Traditional Medicine in Geriatric Care

Dr Tharumaningam M Muthiah

Indian Traditional Medicine represent the way of healthy living with unique cultural history of its own which have gained global acceptance now on virtue of their fundamental doctrine of holistic approach in treating illnesses. Ageing is a multidimensional process of physical, physiological and psychological degenerative change. The number of elderly population is increasing without limits globally and it is the challenge of the world to limit the disabilities of the elderly and provide them with a healthy and successful ageing process. It can be brought about by developing a safe and cost effective protocol for geriatric care on the basis of the Indian Traditional Medicine like Ayurveda, Siddha and Yoga which have a broad spectrum of geriatric care including preventive measures for combating the ageing process, life style management of the elderly, balanced geriatric diet and the management of diseases related to old age.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 01
DISTINCTIVE GENE EXPRESSION PATTERNS BETWEEN OSTEOSARCOMA CELL LINES CORRELATE WITH REPROGRAMMING CAPACITY

Pei Feng Choong[1,2], Hui Xin Teh[2], Hoon Koon Teoh[1], Alan Han Kiat Ong[2], Kong Bung Choo[2], Tunku Kamarul[3], and Soon Keng Cheong[2]

[1]National Cancer Council Malaysia, Kuala Lumpur; [2]Universiti Tunku Abdul Rahman, Selangor; [3]Universiti Malaya, Kuala Lumpur

Reprogramming of cancer cells imparts pluripotency without altering the genetic mutations involved in carcinogenesis. This approach renders possibility to generate cancer disease model in the laboratory for studying the molecular pathogenesis or for drug discovery of a particular cancer model. We used Yamanaka factors, Oct4, Sox2, Klf4, and cMyc, to transduce four osteosarcoma cell lines. Colonies were manually picked on Day 15 - Day 20 and transferred to new iMEF. Reprogrammed osteosarcomas were characterised by expression of pluripotent markers, embryoid body formation, directed differentiation, and teratoma formation. Gene expression profile via microarray study was carried out using Affymetrix platform and data were analysed using GeneSpring software. By using the above-mentioned factors, we managed to reprogramme the four osteosarcoma cell lines to pluripotent state. Embryonic stem cell (ESC)-like clusters expressed pluripotency markers, formed embryoid body-like spheres, and could differentiate into adipocytes, similar to ESC. In vivo study showed teratoma formation in reprogrammed G292, iG292. Our data showed that the four OS cell lines demonstrated different capacity towards reprogramming. Global gene expression profiles of parental cell lines appeared to correlate with the differential capacity of reprogramming observed in the osteosarcoma cell lines.

POSTER NUMBER: FMHS 02
FRACTURE RISK ASSESSMENT IN PATIENTS AGE 50 AND OVER WITH FRAGILITY FRACTURE OF THE LOWER LIMB

Sailesh MK[1] and B Hanusch[2]

[1]School of Medical Education, Newcastle University, Newcastle-upon Tyne, United Kingdom;
[2]Department of Trauma & Orthopaedics, South Tees Hospital NHS Foundation Trust, United Kingdom

In the UK, approximately 300,000 patients present with osteoporotic fragility fractures annually. A validated risk assessment tool to predict future risks and aid decision making is FRAX®. The objectives of our study were to assess patients aged 50 and over with fragility fracture of the lower limb fracture risk according to NICE Guidance 146 and suggest changes of practice if guidance was not met. A retrospective study of patients that were admitted to South Tees Hospitals between 01/01/2016 and 30/06/2016 aged 50 and over with a fragility fracture were identified. Data were obtained from patients' notes, attendance records, and the fracture liaison service, using a standardised pro-forma. Ten-year fracture risk was then calculated using FRAX® and need for Bone Mineral Density (BMD) measurement was determined using NOGG guidance. We identified 81 patients age 50 and over with a lower limb fracture. Fifty case notes were reviewed and 35 fulfilled the inclusion criteria. Among the patients, 89.7% had their fracture risk assessed, while 10.3% who did not have their fracture risk assessed did not meet any of the exclusion criteria. Overall, the facture liaison service had identified 90.4% of patients that needed their BMD measured. Of that, 19.0% could not get it done due to patient factors. For this particular group of patients, we met the standards in accordance to the NICE guidance 146. No recommendation for change of practice was made. A re-audit was recommended next year to ensure that the standards are maintained.

POSTER NUMBER: FMHS 03
CHARACTERIZATION OF A TIGECYCLINE-SELECTED MUTANT OF *Mycobacterium abcessus*

Hien Fuh Ng[1], Joon Liang Tan[2], Thaw Zin[1], and Yun Fong Ngeow[1]

[1]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Selangor
[2]Faculty of Information Science and Technology, Multimedia University

Tigecycline is a new tetracycline antibiotic that inhibits the elongation phase in protein synthesis, by binding to the ribosomal A site of the 30S subunit and impeding translation. It has a bulky side chain that confers the ability to evade two common mechanisms of tetracycline resistance, i.e., active efflux and ribosomal protection. Nevertheless, resistance has been observed among common bacterial pathogens, principally, the Gram-negative bacteria. Mycobacterium abscessus is a rapid-growing non-tuberculous Mycobacterium species that is commonly associated with human infections. It is notorious for its resistance to multiple antibiotics, mediated through chromosomal mutations that arise under the selective pressure of antibiotic use. Hitherto, tigecycline resistance has yet to be described in this bacterium. However, with wider clinical use of tigecycline, it is anticipated that resistant infections will soon appear. The objective of this study was to identify possible resistance mechanisms through laboratory-derived tigecycline-resistant mutants. A spontaneous tigecycline resistant mutant of M. abscessus ATCC 19977 was selected based on the principles of Luria-Delbrück experiment. Preliminary results showed that tigecycline has a bacteriostatic effect on M. abscessus. The spontaneous mutation(s) increased the minimum inhibitory concentration (MIC) of tigecycline 8-fold above the baseline MIC. M. abscessus variable-number-tandem-repeat analysis (MaVA) was performed to confirm the clonal relationship between the mutant and ATCC 19977. Growth-kinetics study showed that this mutant was replicating slower than its wild-type counterpart, suggesting the spontaneous mutation(s) may impart a fitness cost to the bacterium. Disk-diffusion susceptibility tests demonstrated that tigecycline-selected mutations were associated with decreased susceptibility to amakacin and imipenem, two of the recommended drugs for M. abscessus treatment. Further characterizations of selected tigecycline resistant mutants will include tests for time-kill kinetics, post-antibiotic effect, and the identification of molecular determinants of resistance by the PCR amplification of tigecycline-resistance homologs.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 04
UDP-GLUCURONOSYL TRANSFERASE 1A1 (UGT1A1) GENE POLYMORPHISMS IN MALAYSIAN INDIANS PRESENTING WITH SIGNIFICANT NEONATAL HYPERBILIRUBINEMIA IN A MALAYSIAN HOSPITAL

S Shwe[1], HK Ong[1], NY Boo[1], SC Chee[2], M Maslina[2], M Ling[2], and A Kaur[2]

[1]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang;
[2]Paediatric Ward, Hospital Selayang, Batu Caves

Significant neonatal hyperbilirubinemia (SNH) can lead to acute bilirubin encephalopathy which frequently evolves into chronic stage called kernicterus. The variations of the UDP-glucuronosyl transferase 1A1 (UGT1A1) gene have been reported to be a risk factor associated with neonatal hyperbilirubinemia. UGT1A1 mutation has yet to be reported in Malaysian Indians with SNH. Hence, we investigated the association of UGT1A1 mutation with SNH in Malaysian Indians. We carried out a case-control study in the Selayang hospital over an 18-month period. The inclusion criteria were all full-term Malaysian Indian neonates admitted for treatment of hyperbilirubinemia. Thirty six neonates were recruited (19 with SNH and 17 without SNH, i.e, no-SNH). After parental consent, dry blood spots (DBS) were collected from them. Genomic DNA was extracted from each DBS sample and used for the profiling of five common UGT1A1 gene variants as reported in previous studies. The amplified products were digested with restriction enzyme followed by agarose gel electrophoresis. Positive samples were verified by DNA sequencing. The gene profiles were compared between infants with and without SNH. Of the five variants examined, three (1456T>G, 686C>A, and 1091C>T) were not detected. The other two UGT1A1 variants were detected: 211G>A (SNH=15.79%, no-SNH=0%) and A(TA)7TAA (SNH=10.53%, no-SNH=5.88%). In addition, all 36 Indian neonates were homozygous for UGT1A1 gene at nucleotide 214G>C (Alu72Pro). This is the first report of Malaysian Indian neonates having UGT1A1 variants 211G>A and A(TA)7TAA. Both variants were more commonly associated with significant neonatal hyperbilirubinemia in these neonates.

POSTER NUMBER: FMHS 05
INTERLEUKIN-6 SILENCING IN MESENCHYMAL STROMAL CELLS BY ADENOVIRUS-BASED SHORT HAIRPIN RNA INHIBITS MULTIPLE MYELOMA CELL GROWTH

Hoon Koon Teoh[1,2], Pei Pei Chong[2], Maha Abdullah[2], Zamberi Sekawi[2], Geok Chin Tan[3], Chooi Fun Leong[3], and Soon Keng Cheong[1,4]

[1]PPUKM-MAKNA Cancer Center, Universiti Kebangsaan Malaysia Medical Centre; [2] Faculty of Medicine and Health Sciences, Universiti Putra Malaysia; [3]Faculty of Medicine, Universiti Kebangsaan Malaysia; [4]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman

Mesenchymal stromal cells (MSC) produce high levels of interleukin-6 (IL-6) that promotes the growth of multiple myeloma. As current IL-6 monoclonal antibody therapies have yet to yield significant clinical responses, more effective method of targeting aberrant IL-6 production by MSC is needed. In this study, we evaluated the short hairpin RNA (shRNA)-mediated silencing of IL-6 in MSC and the efficacy of these modified MSC on U266 multiple myeloma cell growth inhibition in vitro and in vivo. IL-6 shRNA adenovirus vector (pAD-BLOCK-iT/IL6), at multiplicity of infection (MOI) of 20, was transduced into 2x104 MSC. Supernatant post transduction was collected at fixed intervals and IL-6 level was determined using ELISA. Viability, immunophenotypic profile, and trilineage differentiation capacity of transduced MSC were then assessed. For in vitro efficacy assay, conditioned medium from transduced MSC was added into wells containing 3x102 U266 at 2:1 ratio. Viability post co-culture was determined at fixed intervals using MTS assay. The in vivo efficacy assay was then evaluated in a murine subcutaneous model of human multiple myeloma followed by histological analysis of the harvested tumours. At 120 h post transduction, IL-6 was suppressed to 39% at MOI=20 when compared to control MSC (100%) without affecting MSC major biological properties. In vitro results showed significant inhibition of U266 cell growth by half at day 5 when cultured in conditioned medium of transduced MSC, whereas in vivo results showed significant reduction of U266 tumour volume and tumour mitotic index when co-injected with transduced MSC. MSC post shRNA-mediated IL-6 silencing displayed in vitro and in vivo antitumour efficacy against multiple myeloma cells. The potential of MSC for stable gene suppression using adenovirus-based shRNA transduction should be further investigated as an alternative approach for targeting IL-6 in multiple myeloma therapy.

POSTER NUMBER: FMHS 06
SYSTEMIC DELIVERY OF siRNA-BASED THERAPEUTICS USING FUNCTIONALISED SINGLE-WALLED CARBON NANOTUBES

Yuen Fen Tan[1,2], Soon Keng Cheong[2,4], and Chee Onn Leong[3]

[1]Postgraduate Studies and Research and [3]Center for Cancer and Stem Cell Research, International Medical University, Bukit Jalil, Kuala Lumpur; [2]PPUKM-MAKNA Cancer Centre, Kuala Lumpur; [4]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Selangor

Carbon nanotubes (CNTs) are potential candidates for drug, antigen, and nucleic acid delivery vehicle in nanomedicine. The large surface of CNTs provides structural advantages and allows loading of functional groups or therapeutics such as nucleic acid, drugs, and proteins. Our study aimed to deliver siRNA to cells using single walled carbon nanotube (SWNT) to achieve gene silencing effect. SWNT was functionalized by dissolving 1 mg of HiPCo SWNTs and 5 mg of PL-PEG-NH or PL-PEG-maleimide in 5 ml of water, sonicated for 60 min at room temperature, and centrifuged for 6 h. The supernatant was collected and measured at 808 nm with a UV–VIS–NIR spectrophotometer. The resultant non-covalent functionalized SWNTs were further conjugated with a 5'-thiolated siRNA against GFP (siGFP) and RFP (siRFP). In vitro silencing of GFP and RFP expressions with SWNT-siRNA was evaluated in stable expression cell lines with fluorescence spectroscopy. A range of 50-80% GFP expression knocked down was observed in H1299, HeLa, MCF-7, and 293T cells by SWNT-siGFP. SWNT conjugated with both siGFP and siRFP knocked down both GFP and RFP simultaneously in H1299 stable co-expression cell line. Also, gene silencing was observed despite incubation with inhibitors on different cellular internalization pathways. They were chlorpromazine for clathrin-mediated endocytosis inhibitor, genistein for caveolae-mediated endocytosis inhibitor, and sodium azide for energy depletion agent. The successful knockdown of GFP expression in different cell lines indicated that siRNA were released from the conjugated SWNT-siRNA in the cytoplasm and silenced the gene expression. It also indicated that two different types of siRNA targets could be conjugated with SWNT and achieved two different gene silencing effects simultaneously. The internalization of SWNT by the non-phagocytic cells (H1299) was found not to solely depend on single cellular entry pathway to achieve the gene silencing effect.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 07
REGULATION AND ROLE OF MIRNA (miRNA) AND TARGET GENES IN CELL CYCLE DURING OXIDATIVE STRESS-INDUCED PREMATURE SENESCENCE IN MESENCHYMAL STEM CELLS

Lihui Tai[1,2], Chiu-Jung Huang[4], Kong Bung Choo[2,3], Chee Yin Wong[2], Soon Keng Cheong[1,2], and Tunku Kamarul[5]

[1]PPUKM-MAKNA Cancer Centre, Kuala Lumpur; [2]Centre for Stem Cell Research and [3]Department of Preclinical Sciences, Universiti Tunku Abdul Rahman, Selangor; [4]Department of Animal Science & Graduate Institute of Biotechnology, Chinese Culture University, Taipei, Taiwan; [5]National Orthopaedic Centre for Excellence and Learning, Tissue Engineering Group, University of Malaya, Kuala Lumpur

Multipotent mesenchymal stem cells (MSC) have great potentials in regenerative medicine and therapeutic applications. However on in vitro expansion, MSC enter irreversible growth arrest and eventually senescence as a result of oxidative stress. microRNAs (miRNAs) negatively regulate cell cycle gene expression to mediate senescence pathways, but the mechanism is still unclear. This study aimed to develop an oxidative stress-induced premature senescence (OSIPS) model in Wharton's Jelly-derived MSC (WJ-MSC) to study the role of differentially expressed miRNAs associated with the G1/S-phase of the cell cycle during senescence. In Part I, an OSIPS WJ-MSC model was established by 200 μM hydrogen peroxide (H2O2) treatment and the senescence state was validated by morphological changes, senescence associated β-galactosidase assay, and senescence biomarkers expression. Cell cycle analysis showed that in OSIPS WJ-MSC, G1-phase cell population increased while S-phase population decreased. Evidences further confirmed that OSIPS cells closely resembled replicative senescence in WJ-MSC. In Part II, miRNA microarray analysis of OSIPS WJ-MSC identified seven up-regulated and five down-regulated miRNAs that fulfilled the criteria of log2(fold change) >1 or <-1 and $p<0.05$. The microarray data were confirmed by qRT-PCR. Focussing on the less studied miR-20b-5p and miR-106a-5p in the down-regulated group, time-course studies indicated rapid and irreversible suppression of the miRNAs in OSIPS WJ-MSC. In Part III, transient over-expression showed that miR-20b-5p and miR-106a-5p interchangeably promoted the growth of WJ-MSC, with concurrent increase in DNA synthesis rate, suggesting a regulatory role for miR-20b-5p/miR-106a-5p in the cell cycle. Bioinformatics interrogation predicted that miR-20b-5p/miR-106a-5p targeted pro- and anti-proliferative genes of the G1/S-transition; such targeting was confirmed by luciferase assays. In OSIPS WJ-MSC, down-regulated miR-20b-5p/miR-106a-5p expression was shown to be inversely correlated with increased mRNA and protein expression levels of CCND1, CDK6, and p21, but not E2F1. A model depicting the role of miR-17 miRNAs in regulating the G1/S-phase of the cell cycle in OSIPS MSC was proposed. Overall, the results demonstrated the participation of miR-20b-5p/miR-106a-5p in oxidative stress-induced senescence in MSC by targeting the G1/S-phase factors of the cell cycle.

POSTER NUMBER: FMHS 08
INDUCED PLURIPOTENT STEM CELL LINE DERIVED FROM H103 – ORAL SQUAMOUS CELL CARCINOMA (OSCC)

Nalini Devi Verusingam[1,6], Swee-Keong Yeap[2], Huynk Ky[3], Ian Charles Paterson[4], Suan-Phaik Khoo[5], Soon-Keng Cheong[1, 6], and Han-Kiat Ong[6]

[1]PPUKM-MAKNA Cancer Centre, Cheras, Kuala Lumpur; [2]Institute of Bioscience, Universiti Putra Malaysia, Serdang, Selangor; [3]Crop Science Department, College of Agriculture and Applied Biology, Cantho University, Vietnam; [4]Department of Oral Biology and Biomedical Sciences, Faculty of Dentistry, University of Malaya, Kuala Lumpur; [5]School of Dentistry, International Medical University, Bukit Jalil, Kuala Lumpur; [6]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Selangor

Oral squamous cell carcinoma (OSCC) is an important cause of death owing to cancer with increasing incidence worldwide. Available models for OSCC derived from primary tumours have limitations for in-vitro studies owing to lack of cell number and continued mutations on propagation. Studies have shown that induced pluripotent stem cells (iPSCs) technology provides a new platform to study tumour characteristics via reprogrammed cancer cells. IPSCs provide a pathway for generating previously inaccessible cells and hold differentiation capacity which permits development of patient-specific disease model that could be used for research and therapy. H103 cells were reprogrammed via retrovirus-mediated OSKM factors. Putative colonies were characterised for morphological changes under light microscopy and pluripotency gene expression by immunofluorescence staining. These colonies were then subjected to embryoid body (EB) formation and trans-differentiation into mesoderm lineage cells. Presence of three germ layers in EB was assessed by immunofluorescence staining. Trans-differentiation into mesodermal lineage cells was demonstrated with Alizarin Red S for osteocytes and Oil O red for adiocytes. Embryonic stem cell (ESC)-like colonies appeared at day 15 and were morphologically different from the parental cancer cells. Specific pluripotency markers were detected in ESC-like colonies. Three germ layer specific markers were detected in EB. OSCC-IPSCs were shown to trans-differentiate into adipocytes and osteocytes confirmed by respective tissue staining protocol. OSCC cells were successfully reprogrammed into iPSCs using Yamanaka's approach, as evidenced by ESC-like morphology of the colonies, presence of pluripotency markers, EB formation with three germ layers, and capacity to trans-differentiate. H103-iPSCs can be passaged in-vitro above 20 passages without change of properties, indicating their self-renewal capacity.

POSTER NUMBER: FMHS 09
MICRORNA EXPRESSION AND REGULATION OF MET/EMT GENES IN REPROGRAMMED COLORECTAL CANCER CELLS

Michele Sook Yuin Hiew[1,2], Han Ping Cheng[1,2*], Chiu-Jung Huang[3], Sugii Shigeki[4,5], Soon Keng Cheong[1,6], and Kong Bung Choo[1,7]*

[1]Centre for Stem Cell Research, [2]Postgraduate Programme, [6]Dean's Office, and [7]Department of Preclinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Selangor; [3]Department of Animal Science & Graduate Institute of Biotechnology, Chinese Culture University, Taipei, Taiwan; [4]Singapore BioImaging Consortium, Singapore; [5]Duke-NUS Graduate Medical School, Singapore

(*These authors contributed equally to this work.)

Previous studies have demonstrated microRNA (miRNA) regulation of epithelial-mesenchymal transition (EMT) and mesenchymal-epithelial transition (MET) in the reprogramming of somatic cells and in cancer metastasis. However, studies on the miRNA profile of reprogrammed cancer cells are lacking. This study aimed to elucidate the role of specific miRNA(s) in mediating the EMT/MET processes in reprogrammed colorectal cancer (CRC) cells. CRC-derived induced pluripotent cancer (CRC-iPCs) cell lines were first established using retroviral transduction of the Yamanaka factors. The iPC clones obtained expressed selected pluripotency markers and were able to undergo in vitro tri-lineage differentiation. The CRC-iPCs and the parental CRCs were subjected to miRNA microarray analysis, which revealed 50 down-regulated and 52 up-regulated miRNAs, targeting 307 and 317 genes, respectively. The putative target genes are enriched in signaling pathways involved in regulating apoptosis and cell proliferation, and may functionally contribute to self-renewal of the reprogrammed cancer cells. KEGG pathway analysis further supported enhanced cellular reprogramming and self-renewal through the modulation of TGF-β, Wnt and other signaling pathways. Generally down-regulation of the MET genes, CDH1 and OCLN, and up-regulation of the EMT genes, SNAI1 and VIM, in the CRC-iPC cells were observed indicating an inclination to a more mesenchyme-like state in the iPC cells. MET/EMT gene expression was generally reversed on re-differentiation, suggesting epigenetic regulation. Taken together, the data showed altered but reversible miRNA expression and EMT/MET phenotype in the reprogrammed cancer cells, and a possible role for miRNA in promoting EMT in an alternative route of cancer-cell reprogramming.

POSTER NUMBER: FMHS 10
SUPPRESSION OF CANCER PHENOTYPE IN OSTEOSARCOMA DERIVED-INDUCED PLURIPOTENT CANCER CELLS UPON DIFFERENTIATION

Hui Xin Teh[1], Pei Feng Choong[1,2*], Kian Lam Lim[1], Hoon Koon Teoh[2], Han Kiat Ong[1], Kong Bung Choo[1], Soon Keng Cheong[1,2], Manickam Swaminathan[1], and Tunku Kamarul[3]*

[1]Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Selangor;
[2]PPUKM-MAKNA Cancer Centre, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur;
[3]Tissue Engineering Group, National Orthopaedic Centre of Excellence for Research and Learning, Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya, Kuala Lumpur

(*These authors contributed equally to the work.)

Understanding the effect of reprogramming on cancer cells brings potential in using this novel technology in search for truth and cure in cancer. Reprogramming cancer cells may generate a disease model for studying cancer progression as a new therapeutic intervention for cancer. We reprogrammed G-292, U-2 OS, and MG-63 cell lines by using Yamanaka factors retroviral transduction method. To study the differentiation potential of the reprogrammed ostesoarcoma (OS) cells, we differentiated the induced pluripotent osteosarcoma cells into embroid body spontaneously. We also injected induced pluripotent osteosarcoma into immunodeficient mice to form the teratoma. Upon spontaneous differentiation, induced pluripotent osteosarcoma cells expressed the markers of three germ layers. The induced pluripotent osteosarcoma also showed morphological resemblance to embryonic stem cells and could form the teratoma in immunodeficient mice. Both teratoma of reprogrammed G-292 and U-2 OS showed higher expression of p21 and lower expression of CDK4 compared with their parental counterparts. Teratoma of reprogrammed G-292 showed higher expression of p53 and lower expression of MDM2 compared with the tumour from G-292. The induced pluripotent OS cells maintained their in vivo differentiation potential even after prolonged culture with changes to the expression of common osteosarcoma markers. We hypothesise that these changes are most likely due to the suppression of cancer phenotype post reprogramming. This study provided new insight into the disease modeling of osteosarcoma.

POSTER NUMBER: FMHS 11
EFFECT OF ALGINATE CONCENTRATION ON CHONDROGENESIS OF CO-CULTURED HUMAN ADIPOSE-DERIVED STEM CELLS AND NASAL CHONDROCYTES: A BIOLOGICAL STUDY

YeeWa Ewa-Choy[1], Belinda Pingguan-Murphy[2], Nur-Azurah Abdul-Ghani[3], Jeevanan Jahendran[4], and Kien-Hui Chua[1]

[1]Department of Physiology and [3]Department of Obstetrics and Gynaecology, Faculty of Medicine, Universiti Kebangsaan Malaysia;
[2]Department of Biomedical Engineering, Faculty of Engineering, University of Malaya; [4]Suite 16, Pantai Cheras Medical Centre

The three-dimensional (3D) system is one of the important factors to engineer a biocompatible and functional scaffold for the applications of cell-based therapies for cartilage repair. The 3D alginate hydrogel system has previously been shown to potentially promote chondrogenesis. The chondrocytic differentiation of co-cultured adipose-derived stem cells (ADSCs) and nasal chondrocytes (NCs) within alginate constructs are hypothesized to be influenced by the concentration of alginate hydrogel. In this study, we evaluated the efficacy of alginate concentration on chondrogenic differentiation of ADSCs and NCs co-cultured in a biological approach. The co-cultured cells of 2:1 ADSCs-to-NCs ratio were encapsulated in alginate constructs in one of three concentrations (1.0, 1.2, and 1.5%) and cultured under serum-free conditions for 7 days. Cell viability (Trypan Blue Exclusion Test), gycosaminogylycans (GAG) synthesis (1,9-Dimethymethylene Blue Assay), and gene expression (Real-Time Polymerase Chain Reaction) were analysed. All alginate concentration study groups maintained significantly high viability rates, which indicated high permeability for solutes exchange. Furthermore, GAG synthesis with normalization of DNA demonstrated similar trends in all groups. However, there was no significant differences after normalization in each group. The co-cultured cells in the 1.2% group highly expressed COL II and SOX9, denoting the retention of cartilaginous-specific phenotype by suppressing the undifferentiation stem cell marker, OCT4. This study showed that the 1.2% group was less likely to differentiate towards osteogenesis by downregulating osseous marker gene of OSP. However, the 1.0 and 1.5% groups significantly upregulated OSP at day 7. The 1.2% alginate group was relatively effective in creating a microenvironment for chondrocytic differentiation in comparison to other groups. This study suggests that variations in the alginate concentration of co-cultured ADSCs and NCs influence chondrogenesis. The biological performance of the alginate 3D culture concentration in regulating chondrogenic differentiation demonstrates the effectiveness in regenerative therapies of cartilage defects in tissue engineering.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 12
THE OCCURRENCE OF MENINGITIS-ASSOCIATED GENES IN RESPIRATORY ISOLATES OF *Mycobacterium tuberculosis*

Seow Hoon Saw[1], Joon Liang Tan[2], Sook Fan Yap[3], and Yun Fong Ngeow[3]

[1]Faculty of Science and [3]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman;
[2]Faculty of Information Science and Technology, Multimedia University

Mycobacterium tuberculosis (Mtb) is the causative agent of tuberculosis (TB) and the major mycobacterial species associated with central nervous system (CNS) infection. It is not clear what factors promote CNS invasion and pathology in TB, but it has been reported that Mtb isolates from meningitis patients show specific genetic traits not found in respiratory isolates. In this study, we searched for previously identified meningitis-associated genes in whole genome sequences extracted from Mtb, five other mycobacterial species, and two non-mycobacterial neuropathogens, Streptococcus pneumoniae and Neisseria meningitidis. The Mtb genomes were from eight CSF isolates from Malaysians with TB meningitis, 13 respiratory isolates from Malaysians with pulmonary TB, and 56 respiratory Mtb genomes downloaded from public databases. Of 63 genes previously reported to be associated with Mtb meningitis, we found 50-60 homologs in our CSF Mtb genomes, but only 2 were identified in all 8 genomes. These two were homologs of Rv0311 (encoding a hypothetical protein) and Rv0619 (encoding a probable galactose-1-phosphate uridylyltransferase, GalTb). Nine homologs (Rv0014c, Rv1837c, Rv2176, Rv0984, Rv1273c, Rv2318, Rv0983, Rv0966c, and Rv0805) were found in M. bovis, a member of the Mtb complex, and two well-known mycobacterial neuropathogens, M. leprae and M. lepromatosis. Four of these nine homologs (Rv0014c, Rv1837c, Rv2176, and Rv0984) were also found in M. ilatzerense and M. immunogenum, two environmental rapid growers isolated from a brain abscess. In addition, we identified three homologs of 141 genes reported to be associated with S. pneumoniae meningitis (Rv1699, Rv2606c, and Rv0357c, encoding CTP synthase PyrG, pyridoxine biosynthesis protein SnzP, and adenylosuccinate synthetase PurA, respectively) and 2 of 164 virulence genes reported in N. meningitidis (Rv2457c, encoding ATP-dependent CLP protease ATP-binding subunit clpX, and Rv2397c, encoding sulfate-transport ATP-binding protein ABC transporter CysA1). The detection of common meningitis-associated genes in mycobacterial and non-mycobacterial neuropathogens raises speculations on the existence of a pan-bacterial mechanism of CNS infection. However, all the genes shared by our CSF Mtb strains and other neuropathogenic bacterial spp. were also found to be common in the respiratory Mtb genomes that we examined. This finding suggests that CNS infection in TB is more likely to be directed by the expression of multiple virulence factors selected by the interaction between pathogen and host immune responses, rather than the presence of specific genetic traits.

POSTER NUMBER: FMHS 13
UNCOVERING GENETIC DETERMINANTS OF ANTIBIOTIC RESISTANCE IN *Mycobacterium abscessus*

Sharmilla Devi Jayasingam[1], Joon Liang Tan[2], Hien Fuh Ng[1], Thaw Zin[1], and Yun Fong Ngeow[1]

[1]Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman;
[2]Faculty of Information Science and Technology, Multimedia University

Antibiotic resistance has been highlighted as a major threat to human health in the 21st century. Multiple drug resistance is encountered not only among nosocomial pathogens but also in bacteria recovered from community-acquired infections. This paper describes attempts to determine the genetic basis of phenotypic resistances observed in Mycobacterium abscessus, a species of non-tuberculous mycobacteria (NTM) frequently associated with soft tissue and lung infections in healthcare and community settings. Fifty one M. abscessus isolates from human sputum and bronchial aspirates were tested with the Etest for their susceptibilities to five antibiotics, clarithromycin, amikacin, ciprofloxacin, imipenem, and linezolid, commonly used for M. abscessus infections. Subspecies identification was performed with hsp65 PCR followed by Sanger sequencing and phylogenetic analysis. DNA was extracted from all strains for the PCR amplification of known resistance-associated genes and for whole genome sequencing using the Illumina HiSeq platform. Draft genomes were assembled and searched for known resistance genes using web-based software. The identified genes were further analysed with multiple sequence alignments to identify genetic differences between resistant and sensitive strains. Preliminary results showed a high prevalence of imipenem and linezolid resistance in the M. abscessus subspecies. Concordance between genome analysis and phenotypic testing was only about 68%. Horizontally acquired genes associated with macrolide and aminoglycoside resistance were found in 14 (66.7%) of the 21 genomes examined. The mechanism of resistance to ciprofloxacin, imipenem, and linezolid might be novel in a number of isolates.

POSTER NUMBER: FMHS 14
C19MC miR-524-5p TARGETS TP53IPN1 AND EMT GENES TO REGULATE CELLULAR REPROGRAMMING

Phan Nguyen Nhi Nguyen[1,2], Chiu-Jung Huang[4,5], Shigeki Sugii[6,7], Soon Keng Cheong[1,3], and Kong Bung Choo[1,2]

[1]Centre for Stem Cell Research, [2]Department of Preclinical Sciences, and [3]Dean's Office, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Sungai Long, Selangor; [4]Department of Animal Science and 5Graduate Institute of Biotechnology, Chinese Culture University, Taipei, Taiwan; [6]Singapore BioImaging Consortium, A*Star, and [7]Duke-NUS Graduate Medical School, Singapore.

Introduction of the transcription factors, Oct4, Sox2, Klf4, and c-Myc (OSKM), is able to 'reprogramme' somatic cells to become induced pluripotent stem cells (iPSCs). Several microRNAs (miRNAs) are known to enhance reprogramming efficiency when co-expressed with the OSKM factors. The primate-specific chromosome 19 miRNA cluster (C19MC) is essential in primate reproduction, development, and differentiation. MiR-524-5p, a C19MC member, is highly homologous to the reprogramming miR-520d-5p. We had reported that miR-524-5p was expressed in iPSCs but not mesenchymal stem cells (MSCs). This study aimed to elucidate possible contributions of miR-524-5p to the reprogramming process. An miR-524-5p precursor was introduced into human fibroblast HFF-1 in the presence of OSKM, and the relative number of ESC-like colonies stained positively with alkaline phosphatase (AP) and Nanog were quantified to determine reprogramming efficiency. An miR-524-5p mimic was transfected to MSCs to investigate the effects of miR-524-5p on TP53INP1, ZEB2, and SMAD4 expression by real-time PCR and western blots. Direct gene targeting was confirmed by luciferase activity. A phylogenetic tree of TP53INP1 was constructed by the Clustal method. Contribution of miR-524-5p to cell proliferation and apoptosis was examined by cell counts, BrdU, MTT, and cell death assays, and pluripotency gene expression by

real-time PCR. Co-expressing the miR-524 precursor with OSKM resulted in a two-fold significant increase in the number of AP- and Nanog-positive ESC-like colonies indicating an miR-524-5p role in reprogramming. The putative target, TP53INP1, showed an inverse expression relationship with miR-524-5p; direct TP53INP1 targeting was confirmed in luciferase assays. miR-524-5p-induced TP53INP1 down-regulation enhanced cell proliferation, suppressed apoptosis and up-regulated expression of pluripotency genes, all of which are critical early events of the reprogramming process. Interestingly, the TP53INP1 gene may have co-evolved late with the primate-specific miR-524-5p. MiR-524-5p also promoted mesenchymal-epithelial transition (MET), a required initial event of reprogramming, by directly targeting the epithelial-mesenchymal transition (EMT)-related genes, ZEB2 and SMAD4. Via targeting TP53INP1, ZEB2, and SMAD4, miR-524-5p contributes to the early stage of inducing pluripotency by promoting cell proliferation, inhibiting apoptosis, up-regulating expression of pluripotency genes, and enhancing MET. Other C19MC miRNAs may have similar reprogramming functions.

POSTER NUMBER: FMHS 15
METABOLOMIC ANALYSIS OF THE ETHNO-PHARMACOLOGICAL USE OF FIVE LOCAL MEDICINAL PLANTS

Woon Ling Chia, Mei Wei Lai, Teck Yew Wong, Yen Min Lan, and Yang Mooi Lim

Department of Pre-clinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman

The World Health Organization (WHO) estimated that over 80% of the people in developing countries rely on traditional medicinal plants for their primary health care and for treating diseases. In modern medicine, many important therapeutic agents are derived from medicinal plants. Hence, documentation of all the ethno-pharmacological information, traditional knowledge, and metabolic fingerprinting of local medicinal plants is crucial for drug discovery. Metabolomic study can be carried out to reveal the key metabolites found in the medicinal plants. In this study, five local medicinal plants were collected and subjected to metabolic fingerprinting analysis by using liquid chromatography mass spectrometry (LCMS-MS). The metabolic profiling on the total metabolites of these plants is important to relate their medicinal properties, particularly on their anti-tumour promoting activity. The results of this study will serve as references for all research scholars.

POSTER NUMBER: FMHS 16
TARGETING THE TUMOR-SPECIFIC SPLICEOSOME THROUGH IN SILICO VIRTUAL SCREENING FOR DISCOVERY OF NEW SF3B1 SMALL MOLECULE INHIBITORS

Li Zhe Wong[1], Fei Lei Chung[3], Chun Wai Mai[3], and Chee Onn Leong[2,3]

[1]School of Postgraduate Studies, [2]Center for Cancer and Stem Cell Research, and [3]School of Pharmacy, International Medical University, Bukit Jalil, Kuala Lumpur

The coding (exon) and non-coding (intron) eukaryotic genes are expressed as precursor messenger RNA (pre-mRNA). mRNA splicing defines the process by which introns are excised from pre-mRNA and flanking exons are ligated together. This process is catalyzed by the spliceosome in which combination of small nuclear ribonucleoproteins (U1, U2, U4, U5, and U6) forms a spliceosome. The SF3B1 protein is a core component of the U2 snRNP that binds to the branch site and facilitates RNA splicing. Recent studies have identified mutations and dysregulation of SF3B1 activities in subsets of human cancers including chronic lymphocytic leukemias (CLLs), uveal melanomas, pancreatic cancers, and breast cancers. Despite promising in vivo results indicating the potential of spliceosome modulators in targeting the refractory breast cancers, the preclinical and clinical development of such modulators will take several years to complete. In this study, we sought to identify new SF3B1 modulators using massive virtual screening of FDA-approved drugs or novel agents for drug repurposing. A total of 3,000 compounds were screened and hits were identified based on the binding free energy (kcal/mol) of the molecules to the predicted binding sites. Of 90 hits, vitamin D3 and its analogues (calcipotriol and calcitriol) were identified as putative SF3B1 modulators. Further in vitro testing revealed that vitamin D3 and its analogues induced significant mRNA mis-splicing and tumor-specific cell death in MCF7 and MDA-MB-468. Further analyses revealed that vitamin D3 and its analogues significantly reduced SF3B1 protein expression with no changes in its mRNA expression. These results suggest that vitamin D3 and its analogues might interact with SF3B1 to induce protein degradation rather than transcriptional activation.

POSTER NUMBER: FMHS 17
IDENTIFICATION OF NEW MOLECULAR TARGETS FOR TREATMENT OF ENDOMETRIAL CANCERS

Wei Meng Lim[1], Sivalingam Nalliah[2], Felicia Fei Lei Chung[3], Kok Keong Chan[2], and Chee Onn Leong[1,3]

[1]School of Pharmacy, [2]School of Medicine, and [3]Center for Cancer and Stem Cell Research, International Medical University, Bukit Jalil, Kuala Lumpur

With the understanding of genetic alteration in endometrial cancer, new inhibitors have been designed to target signal transduction pathways involved in cancer development. However, results from clinical trials using specific inhibitor alone or in combination with cytotoxic drugs targeting the known molecular targets have shown poor response rate and undesirable adverse effects. Hence, there is an impetus to identify new molecular targets that are more selective against the endometrial cancer cells. Using a kinome-wide shRNA library screen, we have recently identified cyclin-dependent kinases regulatory subunit 1B (CKS1B) as a potential new target regulating the endometrial cancer cell survival. Knock-down of endogenous CKS1B induced significant cell death in a panel of endometrial cancer cell lines (AN3CA, HEC-1A, HEC-1B, RL-95, and Ishikawa), corroborated with the induction of caspase 3 and 9, but not caspase 8, activities. In contrast, no significant cytotoxicity was observed in the THESC non-transformed endometrial epithelial cells suggesting that CKS1B is mediating a tumor-specific survival pathway. Further analyses by immunoblotting revealed an increase of p27 protein expression following depletion of endogenous CKS1B in the Type 2 serous endometrial cancer cells (AN3CA and HEC-1A), while no such changes were observed in the Type 1 Ishikawa endometriod cancer cells. These results suggest that CKS1B might regulate the survival of Type I and II endometrial cancer cells through distinct mechanisms. Together, our results demonstrated that inhibition of CKS1B induced significant tumor-specific cell death in endometrial cancer cells. This finding suggests that CKS1B could be a potential target for therapeutic intervention and warrant further investigation.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 18
DRUG DISCOVERY USING HIGH-THROUGHPUT SCREENING ON LIVER-X-RECEPTOR

Wee-Kiat Tan[1], Felicia Fei Lei Chung[2], Chee Onn Leong[2,3], and Chun Wai Mai[4]

[1]School of Pharmacy, [2]Center for Cancer and Stem Cell Research, [3]Department of Life Sciences, School of Pharmacy, and [4]Department of Pharmaceutical Chemistry, School of Pharmacy, International Medical University, Bukit Jalil, Kuala Lumpur

Liver X receptor (LXR) is a nuclear receptor that has been the target of novel therapy for atherosclerosis. Activation of LXR triggers reverse cholesterol transport by adenosine triphosphate-binding cassette A1 and B1 (ABC A1 and B1). Although the mechanism has been widely reported and validated, the discovery of LXR agonists remains unprogressive. As most of the available agonists are either toxic or not potent, there is an urgent need to generate more LXR agonists for future studies. The drug discovery approach was initiated by constructing a compound library, comprising 528 natural and synthetic entities, in collaboration with several universities in Malaysia. Stable reporter cells (HepG2) were generated by transfecting the cells with LXR lentiviral construct. Then, the generated cells were validated using known LXR agonist (GW3965). In this research, high-throughput screening (HTS) was adopted in primary screening to discover LXR agonists from the compound library. RealTime-GloTM Cell Viability Assay and One-GloTM Luciferase Assay System (Promega,, USA) were used to measure cell viability and LXR activity. In primary screening, LXR-transfected HepG2 cells were treated with different compounds for 24 hours. Based on the primary results, dose-response curves (1.56 to 100μM) of top eight molecules with the highest potency were selected. From the dose-response curves, the most potent compound showed 5.87, 2.95, and 1.46 fold changes compared to negative control at 100, 50, and 25mM, respectively. The least potent compound showed 3.56, 1.81, and 1.25 fold changes at 100, 50, and 25mM, respectively. Serendipitous HTS targeting LXR had led to the discovery of several new LXR agonists. The positive results demonstrated the reliability of random screening in early drug discovery process. Thus, the method, characterized by serendipity and phenotypic selection, was shown to be useful in discovering first-in-class drug as the researchers were not restricted by current existing knowledge of drug discovery.

POSTER NUMBER: FMHS 19
FUNCTIONAL ROLE OF p21 PROTEIN-ACTIVATED KINASE 4 (PAK4) IN INVASIVE ORAL SQUAMOUS CELL CARCINOMA

Si Hoey Tan[1], Fei Lei Chung[3], and Chee Onn Leong[2,3]

[1]School of Postgraduate Studies, [2]Center for Cancer and Stem Cell Research, and [3]School of Pharmacy, International Medical University, Bukit Jalil, Kuala Lumpur

Oral squamous cell carcinoma (OSCC) is the most common malignant tumour in the oral and maxillofacial regions and it accounts for more than 80% of all cases of head and neck cancer. Despite advances in treatment strategies, the 5-year survival rate of patients has remained at 55% for the past 30 years. Recently, numerous studies have been conducted on PAK4 (protein kinase), known to play a pivotal role in the progression of different types of cancers like breast, prostate, and thyroid cancers. However, the underlying mechanism of PAK4's functional roles has yet to be elucidated. In this study, we demonstrated that depletion of PAK4 conferred reduced clonogenicity, cell motility, and survival in a panel of OSCC cell lines. To further understand the complex signalling network of PAK4, we performed global proteomic profiling of both PAK4-depleted H103 and H357 cells. We identified several novel targets of PAK4, like p16INK4A, pre-Mrna splicing factors (SRSF2, SRSF5, SRSF6), and proteasome activator subunits (PSME1-4). Indeed, knockdown of PAK4 increased p16INK4A expression at the transcriptional level and perturbed splicing activity, resulting in aberrant intron retention.

POSTER NUMBER: FMHS 20
DEVELOPMENT OF THERMOSENSITIVE POLY(N-ISOPROPYLACRYLAMIDE-CO-GELATIN) MICROCARRIERS FOR 3-DIMENSIONAL CELL CULTURE

Lisa Yeo[1], Soon Keng Cheong[2], and Yang Mooi Lim[1]

[1]Department of Pre-Clinical Sciences and 2Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman

Many commercially available microcarriers allow cell attachment and proliferation for large scale expansion. However, proteolytic enzyme treatment is necessary during the harvesting process. Excessive exposure to enzyme may lead to damages of cells and extracellular matrices. Hence, the objective of this project was to fabricate microcarriers that enable cell attachment and detachment without proteolytic enzyme treatment. The harvesting process can be simplified by lowering the temperature, while preserving cell structure, metabolism and viability. Thermosensitive poly(N-isopropylacrylamide-co-gelatin), p(NIPAAm-co-Gel), microcarriers were synthesised. They were transparent and suitable for 3D cell culture. In static microcarrier culture, cells were observed with inverted and fluorescence microscopes to adhere on these p(NIPAAm-co-Gel) microcarriers. Temperature alteration to 20°C for 1 hour allowed harvesting of WJ-MSC, with an average of 65.74±24.67% (n=6) to initial seeding. In conclusion, we successfully synthesised thermoresponsive p(NIPAAm-co-Gel) microcarriers that enable cell harvesting by temperature alteration. The usage of microcarriers could be further optimized for clinical cell based treatment that requires high demand of cells.

ABSTRACTS OF POSTER PRESENTATION

POSTER NUMBER: FMHS 21
NUTRITIONAL STATUS OF THE ELDERLY IN LONG-TERM CARE HOMES: A CROSS-SECTIONAL STUDY

SF Yap, PP Leong, Pramod DS, Thaw Zin, SF Liew, LF Woo, PY Choo, Nadia MH, and NY Boo

Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Selangor

An observational study was carried out to determine the nutritional status of elderly residents (aged 60 years and above) from long-term care homes within the Klang valley. A total of 149 participants comprising 40 (26.8%) males and 109 (73.2%) females were recruited. The large majority of the participants were Chinese (79.9%). Their age ranged from 60 years to 93 years. The participants were interviewed and assessed by trained medical and healthcare personnel to obtain social demographic and relevant medical information. The mini nutritional assessment (MNA) was used to assess the nutritional status, the MiniCog to assess the cognition status, and the Barthel index to assess the level of dependency (BADL). The results of the MNA demonstrated that a very large proportion of the subjects were either at risk of malnutrition (N=93, 62.4%), or malnourished (N=29, 19.5%). Only 27 (18.1%) were normal (nourished). Their body mass index (BMI) showed similar trend. Multivariate analysis showed that no education [adjusted odds ratio (OR): 7.99; 95% confidence intervals (CI) 1.83, 34.94], impaired cognitive function (adjusted OR: 3.86; 95% CI: 1.37, 10.87), and low level of basic daily activities (adjusted OR: 6.01; 95% CI: 1.44, 25.0) were significant risk factors associated with malnutrition, when compared with participants with normal nutrition and at risk of malnutrition.

POSTER NUMBER: FMHS 22
METABOLITES DISTRIBUTION OF ACID-EXTRACTED EDIBLE BIRD'S NEST EXTRACT DETERMINED BY LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY

Shi Ruo Tong[1], Yu Siong Ho[1], Nurziana Sharmilla Binti Nawawi[1], Iekhsan Othman[2], Chee Hong Tan[3], Soon Keng Cheong[1], and Yang Mooi Lim[1]

[1]Department of Pre-clinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Selangor; [2]Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Bandar Sunway, Selangor; [3]RBN Global Berhad, Brem Mall, Kuala Lumpur.

Edible bird's nest (EBN) is produced from the salivary secretion of the genus Aerodramus swiftlet. Li ShiZhen from the early Chinese dynasties recorded the medicinal properties of EBN in Ben Cao Gang Mu (本草纲目). Lately, several scientific reports have discussed the therapeutic values of EBN with respect to their mitogenic, antioxidant, anti-inflammation, anti-viral, and anti-cancer effects. Despite the significant findings on the therapeutic values of EBN, there is still much unknown about the EBN metabolites that are contributing to the therapeutic values. Hence, in this study, liquid chromatography-mass spectrometry (LCMS) was used to perform metabolite profiling on the acid-extracted EBN extract. The acid-extracted EBN extract was subjected to Quadrupole Time of flight LCMS (QTOF–LCMS) analysis. The identified metabolites were then subjected to a series of data mining processes where the high abundances of metabolites that fulfilled the threshold score of 85 and 5 ppm differences from the database were accepted. The metabolite distribution of EBN was categorised into five groups comprising carbohydrates, peptides, lipids, vitamins, and secondary metabolites. Sialic acid, known to be the key biomarker in EBN, was identified and quantified by the Triple Quadrupole LCMS (QQQ-LCMS) approach. A total of 12.28% of sialic acid was found in 1 mg of acid-extracted EBN extract. These preliminary results provide the essential knowledge on the metabolites present in this extract, which could be used as the reference to correlate the medicinal properties of EBN.

POSTER NUMBER: FMHS 23
ESTABLISHMENT OF THE MODULAR IMMUNE IN VITRO CONSTRUCT TO EVALUATE THE EFFECT OF EDIBLE BIRD'S NEST ON HUMAN IMMUNITY

Mel June Choong[1], Lay Cheng Lim[1], Chee Hong Tan[2], Soon Keng Cheong[1], and Yang Mooi Lim[1]

[1]Department of Pre-clinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Selangor; [2]Royal Bird's Nest Sdn. Bhd., Brem Mall, Kuala Lumpur

Edible bird's nest (EBN) is regarded as an immune-enhancing food because it is rich in glycoproteins, sialic acid residues, amino acids, and epidermal growth factors. However, the mechanism of actions of EBN in enhancing human immunity remains largely unknown. Hence, this study aims to establish the modular immune in vitro construct (MIMIC) for evaluating the effect of water-extracted EBN extract on human immunity. The first phase of MIMIC is the establishment of peripheral tissue equivalent (PTE) module which represents innate immune responses of individual human subject. A monolayer of human endothelial cell (HUVEC) was grown on top of a collagen matrix coated in hanging insert in a cell culture well. A total of 20 mL of fresh blood from individual healthy donor was collected and the CD14+ monocytes were purified by positive selection using Magnetic Activated Cell Sorting (MACS). Then, the isolated monocytes were added on top of HUVEC, migrated across the endothelial cells, and recovered from the lower chamber and counted. The transmigrated monocytes that differentiated into antigen presenting cells, such as dendritic cells (DCs) or macrophages, were further immunocharacterized by flow cytometry. The collected DCs will be treated with the EBN extract in subsequent experiments to confirm their immunomodulatory effect. The preliminary results showed that 46.21% of monocytes successfully transmigrated and differentiated into DCs. Flow cytometry analysis showed that 11.8% of CD80+ immature DCs and 3.4% of CD83+ mature DCs were differentiated from monocytes and both showed dendritic-like characteristics under microscopic observation. The establishment of this PTE module enabled the continuation of study to develop the lymphoid tissue equivalent (LTE) module which represents adaptive immune responses where functional assay can be conducted afterwards.

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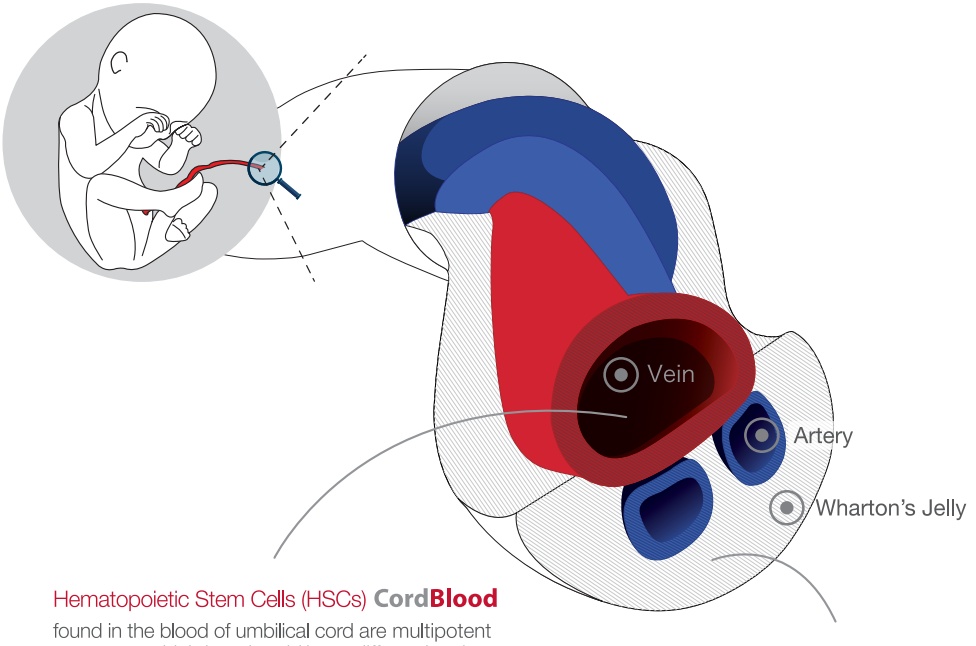

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