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Network on Research and Postgraduate Education in Biophysics, Biotechnology and Environmental Health

1st Edition
Cell Science and Molecular Biology
2020 Conference

November 18-20, 2020

In Collaborations With

https://www.confrontiers.com/cellscience-conference-virtual-2020/

Day 1 : November 18 2020

Keynote Presentation

10:00 -10:40	**Title: The Metabolic Drewing water efflux from the cells as a potential therapeutic target** Sinerik Ayrapetyan, UNESCO Chair in life Sciences LSIPEC, Yerevan Armenia

Chair: Sinerik Ayrapetyan, UNESCO Chair in life Sciences LSIPEC, Yerevan Armenia

Coffee Break: 10:40- 11:00

11:00-11:40	**Title: Clinical Trial Evaluating the Efficacy of Mesenchymal Stromal Cell Injections for the Treatment of Chronic Pelvic Complications Induced by Radiation Therapy** Alain Chapel, Institute of Radiation and Nuclear safety, France
11:40-12:20	**Title: Broken Energy Homeostasis and Obesity Pathogenesis: The Surrounding Concepts** Abdelaziz Ghanemi, Laval University, Canada
12:20-13:00	**Title: Malignant Tumor Regression Balancing Internal Energies and Chakras Energies Replenishment** Huang Wei Ling, Medical Acupuncture and Pain Management Clinic, Brazil

Lunch Break:13:00-13:45

13:45-14:30	**Title: Learning on cell biology, post Covid19** Prasanna de Silva, Monkwearmouth Hospital Sunderland, United Kingdom
14:30-15:00	**Title: Therapeutic ketosis and the broad field of applications for the ketogenic diet: Ketone ester applications & clinical updates** Raffaele Pilla, St. John of God Hospital, Italy
15:00-15:30	**Title: From SARS-CoV-2 to COVI-Flu: The Pandemic is Upon Us** Yan Leyfman, WACEM-ACAIM Joint Global COVID-19 Taskforce— Immunology Division, USA

Panel Discussions

Day 2 : November 19 2020

Keynote Forum

10:00-10:40	**Title: BH3 Profiling** Asli Giray, Alanya Alaaddin Keykubat University, Turkey

Coffee Break: 10:40-11:00

11:00-11:30	**Title: Energy and metabolic pathways in trefoil factor family member 2 (Tff2) KO mice beyond the protection from high-fat diet-induced obesity** Abdelaziz Ghanemi, Laval University, Canada
11:30-12:00	**Title: Exercise and High-Fat Diet in Obesity: Functional Genomics Perspectives of Two Energy Homeostasis Pillars** Abdelaziz Ghanemi, Laval University, Canada
12:00-12:30	**Title: Chakras' Energies Deficiencies as the Cause of Kidney Cancer** Huang Wei Ling, Medical Acupuncture and Pain Management Clinic, Brazil
12:30-13:00	**Title: Short chain fatty acids (SCFAs) delay the progression of hepatitis B virus (HBV)-associated hepatocellular carcinoma (HCC)** Mark Feitelson, Temple University, United States

Lunch Break:13:00-13:45

13:45-14:15	**Title: Clinical Evaluation of SFA002 in Psoriasis Patients** Mark Feitelson, Temple University, United States

14:15-14:45	**Title: Nanoparticles: The Risks and Benefits in human health and life sciences** Samy abdel fatah abdel azim, Cairo University , Egypt
14:45-15:15	**Title: Potential serum biomarkers for early detection of diabetic nephropathy** Tarek Kamal Motawi, Cairo University , Egypt
	Panel Discussions

Day 3 : November 20 2020	
Keynote Presentation	
10:00-10:30	**Title: Biocompatible amifostine nanoemulsion via expression of nephrin in nephrotoxic experimental rat** Nadia A. Mohamed, National Research centre, Egypt
10:30-11:00	**Title: A review of the relationship between diabetes and COVID-19** Javad Yaghmoorian Khojini, University of Isfahan, Iran
	Coffee Break: 11:00- 11:15
11:15-11:45	**Title: Anakoinosis and drug repurposing as a therapeutic principle for cancer treatment** Dalia K. Zaafar, Modern University for Technology and Information, Egypt
11:45-12:15	**Title: Emerging Paradigm of Patient Care in the Age of Wearable Technology** Elvessa Narvasa, Canadian Council of Cardiovascular Nurses,Canada
12:15-12:45	**Title: Novel metal oxide nanocomposites for the anti-bacterial applications against MDR pathogenic bacteria** Abdus Subhan, Shahjalal University of Science and Technology, Bangladesh
12:45-13:15	**Title:The future of Precision Medicine** Soha Osama Hassanin, Modern University for Technology and information, Egypt
	Panel Discussions

UPCOMING CONFERENCES

International Conference on

Pediatrics Conference

June 09-11, 2021, Paris, France

International Conference on

Nursing Conference

June 09-11, 2021, Paris, France

International Conference on

Dementia And Alzheimer's Disease

June 09-11, 2021, Paris, France

International Conference on

Cardiology Conference

June 09-11, 2021, Paris, France

International Conference on

Oncology Conference

June 09-11, 2021, Paris, France

International Conference on

Diabetes and Endocrinology

June 09-11, 2021, Paris, France


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Thank
You!

It is my pleasure to inform that the UNESCO/UNITWIN Network on Research and Postgraduate Education in Biophysics, Biotechnology and Environmental Health (RPE BBEHC) in collaboration with Confrontiers Conferences LLP is organizing the Cell Science Webinar 2020 to be held on the 18th of November, 2020 with a view to explore the developments in the field on current concepts of Cell Science, especially on the protective function of cells and organisms to environmental pollution, including cell protection to Coronavirus infection.

On behalf of the Organizing Committee I would like to cordially invite you to participate in Cell Science Conference. We welcome and encourage students and postdoctoral researchers to the Cell Science Conference 2020. The organizers have taken special interest to encourage young investigators through awards for best poster, best presentation etc. I hope during the conference the participants will get ample opportunity to exchange their research ideas, discuss with the peers in the field, and establish collaborations. The conference will unfold on-going researches in Biophysics, Biochemistry, Molecular Biology and Biotechnology. Participation in conference will give you a chance to meet colleagues from different countries virtually, share ideas and improve collaboration. As the word “collaboration” emphasizes a big team working together towards shared goals, let’s become a big team, dear colleagues. Although the efforts of life scientists’ societies in the world are mobilized for fighting against SARS CoV-2 pandemic, the coronavirus infection is widely spreading and we still do not know the mechanism of virus penetration into the cell after the immunological reaction of the organism is generated. However, at present it is clear that the risk of infection is higher among aged and non-healthy people. This fact clearly indicates the existence of an unknown metabolic mechanism in healthy people which decreases the risk of virus infection. It is obvious that as cell membrane is the gate for virus infection, the metabolic regulation of barrier properties of the membrane could have a crucial role in realization of the protective function of the organism against virus infection. It is obvious that for evaluating the nature of metabolic mechanisms controlling cell protective function, which is realized on quantum-biological level, multidisciplinary studies are needed. Your presence and deliberation will make this congress remarkably successful in all aspects of modern approaches in Fundamental and Applied Cell Science.

Organizing Committee of the International Conference on Cell Science is looking forward to meeting you in the Webinar on 18.11.2020

Best Regards,
Dr. SINERIK N. AYRAPETYAN
Coordinator of UNESCO/UNITWIN NETWORK

On RPE BBEHC

United Nations
Educational, Scientific and
Cultural Organization

Network on Research and
Postgraduate Education in Biophysics,
Biotechnology and Environmental Health

NETWORK ON RESEARCH AND POSTGRADUATE EDUCATION IN BIOPHYSICS, BIOTECHNOLOGY AND ENVIRONMENTAL HEALTH CONTROL

In 1996 the Biophysics Center of Armenian NAS was awarded the status of UNESCO Chair in Life Sciences by UNESCO Director General Mr. Federico Mayor and was reorganized into Life Sciences International Postgraduate Educational Center (LSIPEC). LSIPEC is specialized in Biophysics, Biotechnology, Environmental Health, Neuroscience, Biomedical Engineering.

The Center is organized at the turn of the century for serving not only as an international educational and research center for promotion of Life Sciences in regional countries but also as a peace generation center for developing friendly ties between peoples of different countries and religions.

The purpose of the Center is to promote cooperative research, advanced training and exchange of information in neurosciences, biophysics, environmental sciences, biotechnology and biomedical engineering in Armenia and worldwide to facilitate the collaboration between high-level, internationally recognized researchers and the local scientific community.
In collaboration with different international organizations UNESCO Chair organizes regular international UNESCO seminars on actual problems of Life Sciences with participation of leading scientists from different countries. A number of international organizations, such as UNESCO, World Health Organization (WHO), US Civilian Research and Development Foundation (CRDF), European Office of Aerospace Research and Development (EOARD), The Office of Naval Research Global (ONRG), Food and Agriculture Organization of the United Nations (FAO), North Atlantic Treaty Organization (NATO) and others have also supported different programs of the Center.

The Center achieves its mission by providing short-term training courses (seminars & workshops) and long-term PhD courses in different aspects of Life Sciences preparing science
leaders of the 21st century.
UNESCO Chair in Life Sciences International Postgraduate Educational Center has agreements with UNESCO Office and Stony Brooke University, NY on staff and student exchange.
In 2017 UNESCO approved the creation of “UNESCO/UNITWIN Interregional Network on PhD Education and Research in Biophysics, Biotechnology and Environmental Health” initiated by UNESCO Chair at Life Sciences International Postgraduate Educational Center.

https://en.unesco.org/events/launch-unescounitwin-interregional-network-phd-education-and-research-biophysics

St. John of God Hospital, Italy

The Brothers Hospitallers of Saint John of God (officially the Hospitaller Order of the Brothers of Saint John of God; abbreviated as O.H.) are a Roman Catholic order founded in 1572. They are also known commonly as the Fatebenefratelli, meaning "Do-Good Brothers" in Italian, the Brothers of Mercy, and the Merciful Brothers. The Order carries out a wide range of health and social service activities in 389 centres and services in 46 countries.

https://www.ohsjd.org/Objects/Home1.asp

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CELLSCIENCE WEBINAR 2020 CONFERENCE

November 18-20, 2020

Keynote Forum

(Day 1)

Sinerik Ayrapetyan

UNESCO Chair in life Sciences LSIPEC, Yerevan Armenia

The Metabolic Drewing water efflux from the cells as a potential therapeutic target

The discovery of our laboratory, that the metabolic driving net water efflux from the cells is a key mechanism for metabolic control of semipermeable properties of cell membrane, the dysfunction of which is a common consequence of cell pathology [17], allows us to consider the metabolic driving water efflux from the cells as a universal therpevtiq target cell pathology, including cancer.

Biography

Prof. Sinerik Ayrapetyan has received his PhD in Cell Biophysics in the Institute of Physiology of Ukraine Academy of Sciences, Kiev during the period of 1966-1970. Currently, he is the coordinator of UNESCO Chair at Life Sciences International Postgraduate Educational Center, Yerevan, Armenia. His research has included the study of metabolic regulation of cell function in norm and pathology. He is serving as a Chief Editor for the Journal of “Bioequivalence and Bioavailability”, and an editorial member of several reputed journals like “Electromagnetic Biology and Medicine”, “ISRN Biophysics”, “European Journal of Biophysics”, “Advances in Life Sciences", “Applied Pharmacy”, “BBA General Subjects”, “International Dental and Medical Research", “International Journal of Basic and Applied Sciences”, “Insights of Medical Sciences”, “Chronicles of Pharmaceutical Science Journal”, “Clinical Investigations”, “Global Drugs and Therapeutics” etc. Prof. Sinerik Ayrapetyan is a member of a number of international societies, such as International Society of Invertebrate Neurobiology (ISIN), International Society for neurochemistry (ISN), European Society for Neurochemistry (ESN), International Brain Research Organization (IBRO), International Union of Pure and Applied Biophysics (IUPAB), Bioelectromagnetics Society (BEMS), WHO International Advisory Committee on Electromagnetobiology and the president of “All Armenian Research Council”. He has authored 7 international books and 115 research articles.

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A Chapel

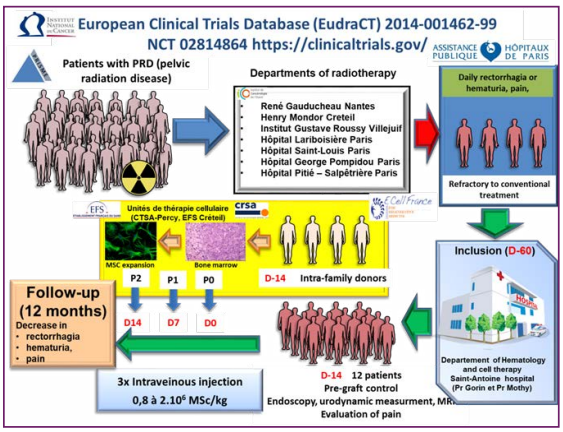
Radiological Protection and Human Health Division, Institute of Radiological Protection and Nuclear Safety, Fontenay-aux-Roses, France

Clinical Trial Evaluating the Efficacy of Mesenchymal Stromal Cell Injections for the Treatment of Chronic Pelvic Complications Induced by Radiation Therapy

The late adverse effects of pelvic radiotherapy concern 5 to 10% of patients, which could be life threatening. However, a clear medical consensus concerning the clinical management of such healthy tissue sequelae does not exist. Our group has demonstrated in preclinical animal models that systemic mesenchymal stromal stem cells (MSCs) injection is a promising approach for the medical management of gastrointestinal disorder after irradiation.

In a phase 1 clinical trial, we have shown that the clinical status of four first patients suffering from severe pelvic side effects (Epinal accident) was improved following MSC injection (figure). Two patients revealed a substantiated clinical response for pain and hemorrhage after MSC therapy. The frequency of painful diarrhea diminished from 6/d to 3/d after the first and 2/d after the 2nd MSC injection in one patient. A beginning fistulization process could be stopped in one patient resulting in a stable remission for more than 3 years of follow-up. A modulation of the lymphocyte subsets towards a regulatory pattern and diminution of activated T cells accompanies the clinical response. MSC therapy was effective on pain, diarrhea, hemorrhage, inflammation, fibrosis and limited fistulization. No toxicity was observed.

We are now starting a clinical research protocol for patients with post-radiation abdominal and pelvic complications who have not seen their symptoms improve after conventional treatments (NCT02814864, Trial evaluating the efficacy of systemic MSC injections for the treatment of severe and chronic radiotherapy-induced abdomino-pelvic complications refractory to standard therapy (PRISME). It involves the participation of 6 radiotherapy services for the recruitment of 12 patients. They will all be treated and followed up in the hematology department of Saint Antoine Hospital. The cells will be prepared in two production centers (EFS Mondor and CTSA). Treatment is a suspension of allogeneic MSCs. Eligible patients must have a grade greater than 2 for rectoragy or hematuria at inclusion and absence of active cancer. Each patient receives 3 injections of MSCs at 7-day intervals. Patients will be followed up over a 12-month period. The main objective is a decrease of one grade on the LENT SOMA scale for rectorrhagia or hematuria. The secondary objective is to reduce the frequency of diarrhea; analgesic consumption, pain and improved quality of life.



1: Clin Rev Allergy Immunol. 2013 Oct;45(2):180-92. doi: 10.1007/s12016-012-8347-6.

2: Stem Cells Transl Med. 2019 Mar;8(3):285-300. doi: 10.1002/sctm.18-0117. Epub 2018 Nov 19.

Biography

For 25 years, he has been developing gene and cell therapy using non-human primates, immune-tolerant mice and rats to protect against the side effects of radiation. He collaborates with clinicians to develop strategies for treatment of patients after radiotherapy overexposures. He has participated in the first establishment of proof of concept of the therapeutic efficacy of Mesenchymal stem cells (MSCs) for the treatment of hematopoietic deficit, radiodermatitis and over dosages of radiotherapy. He has contributed to the first reported correction of deficient hematopoiesis in patients (graft failure and aplastic anemia) thanks to intravenous injection of MSCs restoring the bone marrow microenvironment, mandatory to sustain hematopoiesis after total body irradiation. He is scientific investigator of Clinical phase II trial evaluating the efficacy of systemic MSC injections for the treatment of severe and chronic radiotherapy-induced abdomino-pelvic complications refractory to standard therapy (NCT02814864Hirsch Index 27)

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Abdelaziz Ghanemi
Laval University, Canada

Broken Energy Homeostasis and Obesity Pathogenesis: The Surrounding Concepts

Obesity represents an abnormal fat accumulation resulting from energy imbalances. It represents a disease with heavy consequences on population health and society economy due to its related morbidities and epidemic proportion. Defining and classifying obesity and its related parameters of evaluation is the first challenge toward understanding this multifactorial health problem. Therefore, within this review we report selected illustrative examples of the underlying mechanisms beyond the obesity pathogenesis which is systemic rather than limited to fat accumulation. We also discuss the gut-brain axis and hormones as the controllers of energy homeostasis and report selected impacts of obesity on the key metabolic tissues. The concepts of "brokenenergybalance"isdetailedastheobesitystartingkeystep.Sleepshortageandpsychological factors are also reported with influences on obesity development. Importantly, describing such mechanistic pathways would allow clinicians, biologists and researchers to develop and optimize approaches and methods in terms of diagnosis, classification, clinical evaluation, treatment and prognosis of obesity.

Keywords: obesity; pathogenesis; homeostatic mechanisms; energy misbalance; "broken energy balance"; therapy

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Huang Wei Ling

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Malignant Tumor Regression Balancing Internal Energies and Chakras Energies Replenishment

Introduction: Spontaneous tumor regression was defined differently for many types of cancer by several researchers during the last century. Spontaneous regression is partial or complete disappearance of primary tumor tissue or its metastases in patients who have never been treated. According to traditional Chinese medicine (TCM), malignant tumor has a cause energies deficiencies and Heat retention. Purpose: to demonstrate that malignant tumor can regress in to benign or disappear completely only balancing internal energies, taking out Heat retention and replenishment the chakras energies deficiencies with highly diluted medications. Methods: Three clinical cases reports. All three patients with cancer diagnoses (case one: thyroid; case two: uterus; case three: lungs). All three patients were found to be at their lowest level of energy (through radiesthesia), rating one out of eight. Treatment consisted in reestablish the equilibrium between Yin, Yang, Qi, Blood and taking out Heat retention through Chinese dietary counselling, auricular acupuncture with apex-ear bloodletting, homeopathy according to the Constitutional Homeopathy of Five Elements Based on Traditional Chinese Medicine and crystal-based medication. Results: The first two case reports were cured of their cancer condition without any treatment by Western medicine, only with the treatment done. The third patient, though, was already under radiotherapy and chemotherapy but through the treatment previously described the metastasis disappeared and he achieved a better physical and emotional health state. Conclusion: balancing internal energies and taking out Heat retention through Chinese dietary counseling, auricular acupuncture with apex ear bloodletting and replenishment the chakras energies meridians with highly diluted medications can induce malignant tumor regression according to these three cases reports. More studies should be done with more patients and with different kinds of tumors to have more data and confirmation of these results.

Biography

Huang Wei Ling, Chinese raised in Brazil since the age of one, graduated in medicine in Brazil, specializing in infectious and parasitic diseases, a General Practitioner and Parenteral and Enteral Medical Nutrition Therapist. She was responsible for the control of all prescribed antimicrobial medication, and received an award for the best paper presented at the Brazilian Hospital Infection Control Congress in 1998. She is the owner of the Medical Acupuncture and Pain Management Clinic, and since 1997 has been presenting her work worldwide concerning the treatment of various diseases, using techniques based on several medical traditions around the world.

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Prasanna N. de Silva

Sunderland University/ Monkwearmouth Hospital, United Kingdom

Learning on cell biology, post Covid19

In this presentation, I will aim to generate reflections on what the Covid19 pandemic has taught us about;

- Reactive Oxygen Species (ROS) accumulation within human cells and causes and consequences of this accumulation
- The interplay between the SARSCov2 Spike protein complex and membrane sited ACE2, TMPRS-S2 and Furine cleavage proteins
- The effect on the Renin Angiotensin pathway due to the loss of ACE2 due to interacting with SARSCov2
- The effect of SARSCov2 on the innate and adaptive immune system.

Biography

Dr.Prasanna .desilva is a consultant psychiatrist since 1996 with expertise (CCTs) in adult, old age and rehabilitation psychiatry. He currently works in Sunderland as a Dementia specialist at Monkwearmouth Hospital. After medical school in Aberdeen (qualified August 1984), he trained in psychiatry at Royal Cornhill Hospital including research into brain imaging in dementia and schizophrenia. Thereafter he moved to Hull as Senior Lecturer in 1996, before moving to his substantive post as Adult and Old age primary care liaison for the next 15 years from 1998, which included 8 years as College Tutor. Dr.Prasannahave been a Cochrane Collaborator. Declarations of interests – His private practice involves providing second opinions on capacity in complex probate cases for solicitors in Tynside. He has no associations with pharmaceutical companies (including share ownership). Hobby – playing his 'cello and open top motoring

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Raffaele Pilla

St. John of God Hospital – Fatebenefratelli, Italy

Therapeutic ketosis and the broad field of applications for theketogenic diet: Ketone ester applications & clinical updates

It has been recently shown that nutritional ketosis is effectiveagainst seizure disorders and various acute/chronic neurological disorders. Physiologically, glucose is the primary metabolic fuel for cells. However, many neurodegenerative disorders have been associated with impaired glucose transport/metabolism and with mitochondrial dysfunction, such as Alzheimer's/ Parkinson's disease, general seizure disorders, and traumatic brain injury. Ketone bodies and tricarboxylic acid cycle intermediates epresent alternative fuels for the brain and can bypass the ratelimitingsteps associated with impaired neuronal glucose metabolism. Therefore, therapeutic ketosis can be considered as a metabolic therapy by providing alternative energy substrates. It has been estimated that the brain derives over 60% of its total energy from ketones when glucose availability is limited. In fact, after prolonged periods of fasting or ketogenic diet (KD), the body utilizes energy obtained from free fatty acids (FFAs) released from adipose tissue. Because the brain is unable to derive significant energy from FFAs, hepatic ketogenesis converts FFAs into ketone bodies-hydroxybutyrate (BHB) and acetoacetate (AcAc)-while a percentage of AcAc spontaneously decarboxylates to acetone. Large quantities of ketone bodies accumulate in the blood through this mechanism. This represents a state of normal physiological ketosis and can be therapeutic. Ketone bodies are transported across the blood-brain barrier by monocarboxylic acid transporters to fuel brain function. Starvation or nutritional ketosis is an essential survival mechanism that ensures metabolicnflexibility during prolonged fasting or lack of carbohydrate ingestion. Therapeutic ketosis leads to metabolic adaptations that may improve brain metabolism, restore mitochondrial ATP production, decrease reactive oxygen species production, reduce inflammation, and increase neurotrophic factors' function. It has been shown that KD mimics the effects of fasting and the lack of glucose/insulin signaling, promoting a metabolic shift towards fatty acid utilization. In this work, the author reports a number of successful case reports treated through metabolic ketosis.

Biography

RaffaelePilla, Pharm.D., Ph.D., Doctor Europaeus, received his Master's degree in Pharmacy at G. d'Annunzio University in Chieti-Pescara, Italy in 2005, where he also served internships at the Cell Physiology Laboratory and Molecular Biology Laboratory. Prior, he was an Erasmus Student at Faculté de Pharmacie de Reims in Reims, France. He received his Doctor Europaeus in 2010 from mPitié-Salpétrière Institute in Paris, France. Also in 2010, he received his Ph.D. in Biochemistry, Physiology, and Pathology of Muscle at G. d'Annunzio University in Chieti-Pescara, Italy. He was hired as a Postdoctoral Scholar in the Department of Pharmacology and Physiology at the University of South Florida in Tampa, on two research grants funded by the Office of Naval Research (US Navy), and Divers' Alert Network. He has written and lectured widely worldwide. He has been involved in ongoing research at the University of South Florida with the use of ketone esters.

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Yan Leyfman

WACEM-ACAIM Joint Global COVID-19 Taskforce— Immunology Division, USA

From SARS-CoV-2 to COVI-Flu: The Pandemic is Upon Us

Coronavirus Disease 2019 (COVID-19), a respiratory illness caused by the betacoronavirus SARS-CoV-2, has broad clinical presentations ranging from asymptomatic to fatal. Studies have demonstrated that patients with severe symptoms and a pro-inflammatory state possess a poorer prognosis. We propose a mechanism by which SARS-CoV-2 infection causes systemic organ damage through an IL-6-mediated inflammation. Elevated IL-6 fuels a cytokine release syndrome and hypoxia, resulting in vast systemic injury, multi-organ damage, and eventually organ failure. Additionally, we propose a potential synergism between influenza virus and SARS-CoV-2, which we have termed "COVI-Flu." Under our model, simultaneous infection with both viruses will result in increased IL-6 production, yielding a more widespread systemic injury than with either virus alone. Currently, there are no available safe and effective therapeutic interventions against SARS-CoV-2 or the potential COVI-Flu. Based on the similarities between the disease mechanisms of SARS-CoV-2 and influenza virus, we propose a combination therapy that can control the systemic inflammation induced by both viruses. One approach is the use of a cellular therapy that has yielded promising preliminary efficacy in COVID-19 patients and is on the verge of receiving FDA approval. Looking forward, we forsee combinational therapies being used that can better thwart the virus's heterogeneity and mutational adaptations. In anticipation of the potential COVI-Flu pandemic, we propose a preventative approach that can be implemented now to better prepare for the future. Based on our model, we propose that enacting a flu immunization program can provide some protection against the synergism of the two viruses.

Biography

Yan Leyfman has contributed to the development of several anti-cancer therapies that have recently entered clinical trials and his successes have been recognized by such prestigious organizations as the Barry M. Goldwater Research Foundation, Sigma Xi, New York Times, USA Today, National Society of Collegiate Scholars, and Harvard Medical School. He has been recognized as one of the top medical student researchers in oncology nationally by the American Society of Hematology and American Society of Clinical Oncology and locally by the Pennsylvania Society of Oncology &Hematology and the American College of Physicians. During the COVID-19 pandemic, he was recruited to join the Global COVID-19 Taskforce to serve as a Special Advisor for Immunology, Oncology and Cellular Therapeutics and was made Director of the Immunology Group, which produced a cohesive mechanism of action for SARS-CoV-2, a new prognostic assay to predict patient outcomes, and the first synergistic paradigm between the flu and SARS-CoV-2, termed "COVI-Flu" along with therapeutic interventions for both. Within days of publication ahead of print as the upcoming cover article in the journal, Shock, this manuscript received over 32 million views and was amongst the top five COVID-19 articles worldwide according to QxMD.

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CELLSCIENCE WEBINAR 2020 CONFERENCE

November 18-20, 2020

Keynote Forum

(Day 2)

Asli Giray
Alanya Alaaddin Keykubat University, Turkey

BH3 Profiling

The mitochondrial cell death pathway is the most important pathway in cancer cells response after chemotherapy or radiotherapy. The mechanism of mitochondrial apoptosis is a pathway that causes the outer membrane of mitochondria to become permeable and the release of cytochrome c and pro-apoptotic proteins to the cytoplasm. This process is tightly controlled by BCL-2 proteins. Following cell damage, BAX and BAK proapoptotic proteins undergo allosteric transformation, oligomerize and provide the permeability of the outer membrane of the mitochondria by forming pores, thus cytochrome c passes from mitochondria to cytosol. The pro-survival BCL-2 proteins have different binding affinities for each BH3 protein, and this binding pattern has been successfully converted into a test called BH3 profiling. The basic principle of this test is to measure the permeability of the outer membrane of the mitochondria after the treatment of peptides derived from the BH3 domains with the mitochondria of cells. This criterion can be used to predict the response of cells to chemotherapy agents, indeed, clinical studies have demonstrated the predictive power of BH3 profiling. With BH3 profiling, a peptide-based mitochondrial analysis system, we can determine how close a cell is to the death margin and existing blockages of mitochondrial cell death. The pattern that emerges in response to these peptides gives us information about how prone the cell is to death and how susceptible it is to cellular damage. Thus, it may be possible to develop new treatment approaches that will increase the response to chemotherapy in cancer cells while revealing the basic biological mechanisms in the dynamic process and in much more detail.

Biography

AsliGiray completed her PhD at the age of 34 years from Inonu University and postdoctoral studies from Sabancı University from Turkey. She has worked AlanyaAlaaddinKeykubat University, Faculty of Engineering Department of Genetic and Bioengineering in Turkey since 2017 She worked as a researcher on several projects (14 projects). She has published more than 12 papers.

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Abdelaziz Ghanemia

Laval University, Canada

Energy and metabolic pathways in trefoil factor family member 2 (Tff2) KO mice beyond the protection from high-fat diet-induced obesity

Aims: Trefoil factor family member 2 (TFF2) is a small gut peptide. We have previously shown that Tff2 knock out (KO) mice are protected from high-fat (HF) diet-induced obesity (De Giorgio et al., 2013a). Thus, exploring Tff2 KO-related pathways of mice at the genomic, proteinic and biochemical levels would allow us to elucidate the processes behind this protection from obesity. Main methods: To explore the metabolic and energetic effects related to Tff2 deficiency, we used sampled blood from the previous study to measure levels of free fatty acids, glucose, glycerol and triglycerides in serum. Expression levels of selected genes and proteins related to energy metabolism in the skeletal muscle, liver and adipose tissue were also studied. Key findings: Following the 12-wk challenging of Tff2 KO and WT mice with both HF and low-fat diet, Tff2 KO mice had lower levels of serum glucose, triglycerides and glycerol. Importantly, western blotting and Q_RT-PCR revealed that the expression levels of selected genes and proteins are toward less fat storage and increased energy expenditure by enhancing lipid and glucose utilization via oxidative phosphorylation.

Significance: We mapped a part of the metabolic and biochemical pathways of lipids and glucose involving the adipose tissue, liver, skeletal muscle and sympathetic nervous system that protect Tff2 KO mice from the HF dietinducedobesity. Our data highlight Tff2-related pathways as potential targets for obesity therapies.

Keywords: Energy metabolism, High-fat diet, Obesity protection, Trefoil factor family member 2

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Abdelaziz Ghanemia
Laval University, Canada

Exercise and High-Fat Diet in Obesity: Functional Genomics Perspectives of Two Energy Homeostasis Pillars

The heavy impact of obesity on both the population general health and the economy makes clarifying the underlying mechanisms, identifying pharmacological targets, and developing e_cient therapies for obesity of high importance. The main struggle facing obesity research is that the underlying mechanistic pathways are yet to be fully revealed. This limits both our understanding of pathogenesis and therapeutic progress toward treating the obesity epidemic. The current anti-obesity approaches are mainly a controlled diet and exercise which could have limitations. For instance, the "classical" anti-obesity approach of exercise might not be practical for patientssu_ering from disabilities that prevent them from routine exercise. Therefore, therapeutic alternatives are urgently required. Within this context, pharmacological agents could be relatively e_cient in association to an adequate diet that remains the most e_cient approach in such situation. Herein, we put a spotlight on potential therapeutic targets for obesity identified following di_erential genes expression-based studies aiming to find genes that are di_erentially expressed under diverse conditions depending on physical activity and diet (mainly high-fat), two key factors influencing obesity development andprognosis. Such functional genomics approaches contribute to elucidate the molecular mechanisms that both control obesity development and switch the genetic, biochemical, and metabolic pathways toward a specific energy balance phenotype. It is important to clarify that by "gene-related pathways", we refer to genes, the corresponding proteins and their potential receptors, the enzymes and molecules within both the cells in the intercellular space, that are related to the activation, the regulation, or the inactivation of the gene or its corresponding protein or pathways. We believe that this emerging area of functional genomics-related exploration will not only lead to novel mechanisms but also new applications and implications along with a new generation of treatments for obesity and the related metabolic disorders especially with the modern advances in pharmacological drug targeting and functional genomics techniques.

Keywords: obesity; di_erential genes expression; exercise; high-fat diet; pathways; potential therapeutic targets

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Huang Wei Ling

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Chakras' Energies Deficiencies as the Cause of Kidney Cancer

Malignant kidney tumours account for 2% of the global cancer burden, and its incidence is on the rise. The treatment of patients with renal tumours all underwent the same surgical procedures and patients with advanced disease were treated with similar drugs, none of which were effective. In traditional Chinese medicine cancer is caused by energy deficiencies and Heat retention.

Purpose: The purpose of this study is to demonstrate that one possible cause for kidney cancer development could be the chakras energy deficiency.

Methods: through one case report of a 69-year-old woman who discovered an enlargement of the left kidney during a routine computer tomography. She underwent a surgery to take out the kidney and it was not necessary chemotherapy or radiotherapy. After the surgery, she discovered that the tumour was compromising the bladder and she need to do BCG weekly injection inside the bladder. After, she need to do a radical cystectomy and urostomy. Due to anxiety, depression, fear and weak state she sought a Chinese medicine treatment to recover her energy that was debilitate. The Chinese doctor measured all her chakras energy that were completely depleted in energy, rated 1 out of 8. She began her treatment with Chinese dietary counselling, auricular acupuncture with apex ear bloodletting, systemic acupuncture and moxibustion. It was also used highly diluted medications according to the theory Constitutional Homeopathy of Five Elements Based on Traditional Chinese Medicine and crystal based medications.

Results: The patient begin to feel stronger physically and emotionally to continue her treatment in Western medicine that was aggressive due to the need urinating through the collection bag that held in the abdomen, feeling ugly and physically altered.

Conclusion: Through this case report, the author demonstrates the chakras energy deficiencies in a patient with kidney cancer. The replenishment of the chakras energy is very important to recover the energy of the patients that is leading to cancer formation.

Biography

Huang Wei Ling, born in Taiwan, raised and graduated in medicine in Brazil, specialist in infectious and parasitic diseases, General Practitioner and Parenteral and Enteral Medical Nutrition Therapist. Once in charge of the Hospital Infection Control Service of the City of Franca's General Hospital, she was responsible for the control of all prescribed antimicrobial medication and received an award for the best paper presented at the Brazilian Hospital Infection Control Congress (1998). Since 1997, she works with the approach and treatment of all chronic diseases in a holistic way, with treatment guided through teachings of Traditional Chinese Medicine and Hippocrates.

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Short chain fatty acids (SCFAs) delay the progression of hepatitis B virus (HBV)-associated hepatocellular carcinoma (HCC)

Chronic infection with hepatitis B virus (HBV) is a major risk factor for the development of hepatocellular carcinoma (HCC). The HBV encoded oncoprotein, HBx, alters the expression of host genes and the activity of multiple signal transduction pathways. Short chain fatty acids (SCFAs) have strong anti-inflammatory and anti-neoplastic properties, suggesting that they may block the progression of chronic liver disease (CLD) to HCC. This hypothesis was evaluated in HBx transgenic (HBxTg) mice fed SCFAs. Groups of HBxTg mice were fed with SCFAs or vehicle from 6-9 months of age (and then assessed for dysplasia) or from 9-12 months of age (and then assessed for HCC). Livers from 12 mo. old mice were then analyzed for changes in gene expression by mass spectrometry-based proteomics. SCFA-fed mice had significantly fewer dysplastic ($P < 0.01$) and HCC nodules ($P < 0.05$) compared to PBS fed controls at 9 and 12 months, respectively. Pathway analysis of SCFA fed mice showed down-regulation of several signaling pathways altered by HBx in human CLD and HCC, including those involved in inflammation, PI3K, EGF, and Ras. Treatment with SCFAs was associated with decreased activity of the Ras pathway, which is constitutively activated by HBx. Validation of selected proteins detected by proteomics was performed in all samples. In vitro work showed that SCFAs reduced cell viability in HBx-transfected cell lines in a dose-dependent manner while the viability of primary human hepatocytes was unaffected by SCFAs. Thus, SCFAs delay the pathogenesis of HBV-associated HCC suggesting that they may be a simple, effective intervention against HBV associated CLD and HCC.

Biography

Mark Feitelson received his Ph.D. in Microbiology and Immunology in 1979 from UCLA. He went on to be an American Cancer Society postdoctoral fellow at Stanford University, and was then recruited to the Fox Chase Cancer Center by Dr. Baruch Blumberg (Nobel laureate). In 1991, Dr. Feitelson became Associate Professor of Pathology and Cell Biology at Thomas Jefferson University. In 2007, Dr. Feitelson moved to Temple University, where he is now Professor of Biology. His research has been supported by NIH, industry and foundations for more than 35 years, has more than 150 publications, including two books, and 180 abstracts presented at scientific meetings. Recently, he has shown that molecules isolated from the gut microbiome delay the onset of liver cancer in transgenic mice expressing the hepatitis B oncoprotein and are effective in patients with plaque psoriasis. He is also CSO of SFA Therapeutics, which is a Temple University spin-out of the work in Dr. Feitelson's lab.

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Clinical Evaluation of SFA002 in Psoriasis Patients

Psoriasis is a devastating autoimmune disease affecting 2-3% 0f the Western World's population, or over 30 million people. Current therapies have major side effects.Short chain fatty acids (SCFAs) downregulate multiple inflammatory pathways, including TNFα, IL-17 and IFNγ. All three of these pathways signal through NF-κB andarecentral to the pathogenesis of psoriasis. Given that psoriasis is a chronic inflammatory autoimmune disease, not simply a skin disease, oral systemic treatment was attempted to reconstitute their normal physiological levels. A smallproof-of-concept clinical study was carried out in patients who were previously untreated for mild to severeplaque psoriasis. Each subject was "washed out" of any prior medications for 1 month, then treated for 1 month with a drug formulation including SCFAs, and then followed for 2-4 months. Subjects were given an initial loading dose, followed with TID dosing of a supplement containing two of the active ingredients in SFA002, which is presently patent-pending.All 5 out of 5 subjects showed a remarkable response in less than 30 days. No side effects were observed after the treatment period. An estimated 90% clearing was observed in one patient on drug for 1 year, and another on drug for more than 5 years, again with no reported side effects. When treatment was interrupted due to lack of drug availability, lesions returned, and when drug was reinstated, lesions resolved again. These results, although anecdotal, suggest that SCFAs will provide a simple and safe approach to treating plaque psoriasis. Formal human clinical trials are now underway to evaluate this approach more rigorously.

Biography

Mark Feitelson received his Ph.D. in Microbiology and Immunology in 1979 from UCLA. He went on to be an American Cancer Society postdoctoral fellow at Stanford University, and was then recruited to the Fox Chase Cancer Center by Dr. Baruch Blumberg (Nobel laureate). In 1991, Dr. Feitelson became Associate Professor of Pathology and Cell Biology at Thomas Jefferson University. In 2007, Dr. Feitelson moved to Temple University, where he is now Professor of Biology. His research has been supported by NIH, industry and foundations for more than 35 years, has more than 150 publications, including two books, and 180 abstracts presented at scientific meetings. Recently, he has shown that molecules isolated from the gut microbiome delay the onset of liver cancer in transgenic mice expressing the hepatitis B oncoprotein and are effective in patients with plaque psoriasis. He is also CSO of SFA Therapeutics, which is a Temple University spin-out of the work in Dr. Feitelson's lab.

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Nanoparticles: The Risks and Benefits in human health and life sciences

Nanotechnology is being actively developed for many applications in the medical field, including drug delivery, biosensors and medical imaging. These nanomaterials are being advanced as novel and more targeted treatments for difficult to manage diseases such as cancers. Additionally, the field of medical imaging can be improved with the ability for the specific targeting of diseased tissues at resolutions not capable with current technologies.

In contrast to the beneficial outcomes, using nanoparticles for drug delivery raises various safety concerns. The small size is beneficial, but it could have negative effects. This is a particularly important point as new and more durable materials are used in the production of these nanoparticles. Some nanoparticles can cause inflammation and fibrosis as a result of causing phagolysosomal membrane permeability, formation of reactive oxygen species and activation of the NLRP3 inflammasome . In our studies on TiO2 and CuO-NPS the studies exhibited that the most pronounced effect were displayed Oxidative stress, liver fibrosis, apoptosis and angiogenesis may be implicated in n-TiO2 or CuO-NPS-induced liver toxicity.

While, nanotechnology including the medical use of nanoparticles, hold great promise to improve the diagnosis and treatment of many diseases, we must not lose sight of the necessity to thoroughly test the nanomaterials so that they do not create unexpected adverse effects. Therefore, a situational approach should be used when assessing the benefits and drawbacks to using nanoparticles in medical diagnosis and treatment.

Biography

Samy A. Abdel azim is Professor of molecular biology and Biochemistry At University of Cairo in 2010, In 2008: National research center of Functional and Molecular Biology. Completed his Bachelor degree in Biochemistry from University of Cairo 1982 and his Professional experience 2011. in 2009: Consultant for Clinical Analysis, 2006: Senior Specialist for Clinical Analysis, 1992: Resident in Clinical Analysis , Kasr eleini Pharmacy College Now, research focus on nanoparticles and cell biological and biochemical biomarkers utilized for early diagnosis of diseases by detection of serum microRNA

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Potential serum biomarkers for early detection ofdiabetic nephropathy

Aim: Diabetic nephropathy (DN) is considered as one of the diabetic complications affectingup to 40% of patients with type 1 or type 2 diabetes. In clinical practice, the frequentlyused markers of renal disease and progression are serum creatinine, estimated glomerularfiltration rate (eGFR) and albuminuria. The aim of this study is to determine new biomarkersin human serum which are promising for early detection of DN.

Methods: This study included 50 patients with type 2 diabetes mellitus (T2DM) and 25 clinicallyhealthy individuals. The patients were divided into two groups; group I included 25T2DM patients with normoalbuminuria, and group II consisted of 25 T2DM patientswith microalbuminuria. In all groups, neutrophil gelatinase-associated lipocalin (NGAL),b-trace protein (bTP) and microRNA- 130b (miR-130b) were estimated.

Results: The serum levels of NGAL and bTP were significantly elevated in T2DM patientswith microalbuminuria (group II) compared with T2DM patients with normoalbuminuria(group I) and control subjects but there was no significant difference between group Iand control subjects. Serum miR-130b level was significantly decreased in patients withT2DM (groups I and II) compared with healthy control subjects, with a higher decrease intheir levels in group II compared with group I.

Conclusion: Our results suggest that serum NGAL and bTP as tubular and glomerularmarkers respectively, together with serum miR-130b may be independent and reliable biomarkers for early detection of DN in patients with T2DM

Biography

Dr. Tarek Mohamed Kamal Mohamed Metawie, Professor of Biochemistry, Faculty of Pharmacy, Cairo University. Egyptian, date of birth 6/3/1955. Ph.D. in Pharmaceutical Sciences, 1984; M.Sc. in Pharmaceutical Sciences, 1979; B.Sc. in Pharmaceutical Sciences, Faculty of Pharmacy, Cairo University, 1976

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November 18-20, 2020

Keynote Forum

(Day 3)

Elvessa Narvasa

Canadian Council of Cardio Vascular Nurses, Canada

Emerging Paradigm of Patient Care in the Age of Wearable Technology

Advancement in technology changes the world in a warp speed. Wearable devices holds great potential in reshaping the health provision and has a positive impact on the wearer's health. We are seeing growing numbers of users actively changing their behavior for the better with the adoption of wearable devices. Integrating them in our lifestyle enhances the quality of life, improves healthcare delivery and medical education.

Wearable devices have evolved and there is an increasing interest in their application in medical settings. It can provide information on patient's behavior like blood pressure, breathing patterns and blood glucose levels. It can also generate signals detecting activity. Wrist-worn accelerometers assist in the evaluation of sleep quality in healthy subjects as well as in in-patient and ICU settings where poor sleep has been linked with adverse outcomes. There are also wearable devices that can provide information on heart rhythm. Frequent heart rate tracking as a means of enhancing routine monitoring for early detection may enable the wearer to seek medical guidance, otherwise these conditions would likely go undetected for some time. This can also be a component of an early warning system to detect clinical deterioration for patients with chronic diseases. Furthermore, it could enable detailed and near-continuous characterization of recovery following critical illness. It is a means of recording useful information and incredible amount of data.

Advancement in the area of wearable systems will continue to transform and enhance the quality of our cellscience care. Responsive patient care, challenges and opportunities, and future innovations will be explored in this presentation.

In the near future, NURSES, will inevitably care for patients with wearable technology.

Biography

Elvessa Narvasa has completed Master of Science in Cellscience from Montreal University, Canada. PH.D . She is the Quebec Provincial Director of Canadian Council of Cardiovascular Nurses. Served as Co- President of Quality Assurance ; Team Leader for Hospital Accreditation, Founder of ICU Intermediary care. She had been selected to write the exam for Cardiovascular Certification by the Canadian Nurses Association. Furthermore, she does both in-service as well as invited nurse educator of different hospitals ICU-CCU; PACU/OR and Consultant of College Cellscience Faculty. Organizing committee executive of International Society of Pituitary Surgeons; Multidisciplinary Perioperative Medicine , Montreal University. Invited speaker of Quebec Intensive Care Association as well as 2018 -2019 Keynote speaker ; Honourable Chief Guest of different International and World Cellscience Conferences ; 2019 International RFCCN. SAARC , Critical Care Society. Moreover, keynote speaker of different International Virtual Conference 2020.

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November 18-20, 2020

Scientific Abstacts

(Day 3)

Nadia A. Mohamed
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Biocompatible amifostinenanoemulsion via expression of nephrinin nephrotoxic experimental rat

Drug-induced kidney injury is the causative of acute kidney failure. Amifostine [AMF] loaded Silica nanoemulsion was synthesized using water/oil emulsion with the help of ultra-sonication waves. The as synthesized nanoemulsion[SiNPs@AMF]was examined via transmission electron microscopy and dynamic light scattering in terms of particles shape and hydrodynamic average size. The work was extended to investigate the protective role of this nanoemulsion model as cytoprotector drug effect against cisplatin-induced nephrotoxicity in male albino rats.It was clearly seen that the successful preparation of this model but the particle size was marginally increased when comparing with silica nanoemulsion. Additionally, blood urea nitrogen, Serum creatinine and Urinary total protein were increased and the level of creatinine clearance was decreased. All those were met with disorders in oxidative stress and down regulation in expression of nephrin gene. Also, histopathological changes of the kidney tissue were observed. These changes back to normal by treatment with [SiNPs@AMF]. Conclusions: Oil/water nanoemulsion of [SiNPs@AMF] showed a protective and promising preventive strategy against nephrotoxicity due to their cytoprotective and antioxidant effects.

Key words: Drug nephrotoxicity, silica nanoparticles, Amifostine, cisplatin

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A review of the relationship between diabetes and COVID-19

Background: The coronavirus disease 2019 (COVID-19) infection was first identified in December 2019 in Wuhan, China and it is an evolving pandemic with high morbidity and mortality.Some diseases that involve problems with the hormone insulin are called diabetes.A person with diabetes experiences severe symptoms and complications if they become infected with the virus.

Materials & Methods: In this study, the method of library collection, search of different texts and valid scientific articles was used.

Results and Conclusion: Coronaviruses are positive single-stranded RNA viruses widely distributed in humans and animals. If the pancreas does not secrete insulin, the amount of insulin secreted by the pancreas is small, or the body does not respond well to insulindiabetes can develop. The US Centers for Disease Control and Prevention says that COVID-19 is a threat to public health, and that older people with chronic medical conditions, such as diabetes, are at higher risk for serious illness and complications.According to a study by the Centers for Disease Control and Prevention in China, the death rate from people with diabetes due to the Corona virus is 7%, while the death rate among people with no underlying disease is 0.9%. According to the International Diabetes Federation, it is more difficult to treat infectious disease in people with diabetes due to fluctuations in blood glucose and possible complications of diabetes.Because the immune system is weakened, the fight against the virus becomes more difficult and the recovery period may be longer, and in addition, the virus may grow more in the context of high blood glucose.Infectious shock and sepsis caused by type 1 diabetes are some of the serious complications that some patients with the coronavirus experience.In general, if diabetes is well controlled, the risk of developing acute symptoms due to COVID-19 is as high as that of normal people.

Biography

Mr.Javad has completed his BS from Isfahan University at Iran in 2020. He Graduated in Cellular and Molecular Biology and interested in research in the fields of biology, especially genetics and cancer. He is Member of the team for preparing scientific content in cyberspace in several reputable Iranian research centers. He is a person With a team spirit and experience in participating in the Executive Committee of several international and national congresses, Leadership and participation in translating and writing of several scientific books And participation in the writing of several scientific articles.

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Anakoinosis and drug repurposing as a therapeutic principle for cancer treatment

Classic tumor therapy, consisting of cytotoxic agents or targeted therapy as a traditional cancer therapy, has not overcome several therapeutic limitations including, poor-risk genetic parameters, genetic heterogeneity at different metastatic sites in addition to the problem of undruggable targets. 'Anakoinosis' is a word referring to the principle of communicative reprogramming of tumor tissues. It aims to establish a novel communicative behavior of tumor tissue, the hosting organ, and organism via re-modeling gene expression to recover differentiationand apoptosis competence. Therefore, anakoinosis can lead to cancer control instead of the direct cytotoxic action of anti-cancer chemotherapy. 'Master modulators' is a term introduced for drugs or drug combinationsthatare characterized by the capacity for reprogramming tumor tissues. This tumor tissue reprogramming includes transcriptional modulators, metronomic low-dose chemotherapy, epigenetically modifying agents, and protein binding pro-anakoinotic drugs, such as COX-2 inhibitors. In addition, these drugs are usually drugs with favorable safety profile. These master modulators maybe with low or no activity when used alone; however, they have a synergistic effect when combined withan anti-cancer drug, promoting continuous complete remission in refractory metastatic neoplasia, irrespectively of the tumor type.

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Novel metal oxide nanocomposites for the anti-bacterial applications against MDR pathogenic bacteria

Nanocomposites are being extensively studied as a potential anti-bacterial agent. The anti-bacterial activity of nanomaterial changes with several factors including size, morphologies and crystal growth.1,2Anti-bacterial activity study against several pathogenic bacteria including both Gram positive and Gram negative, have been conducted in presence and absence of light and compared with the standard antibiotic. The metal oxide nanocomposites are effective against multi-drug resistant (MDR) bacteria both in presence and absence of light. The excitation of the nanocomposite by light and formation of the radicals like reactive oxygen species (ROS) prompted bacteria killing through the ROS mechanism. This effectiveness of the composites exerts great mechanical damage of the cell wall of bacteria and intra-cellular machinery. The minimum inhibitory concentration (MIC) is defined as the lowest concentration of a compound that will completely inhibit the visible growth of microorganisms after overnight incubation. Minimum Bactericidal Concentration (MBC) is the lowest concentration of an anti-bacterial agent required to kill a bacterium under a certain set of conditions over a specified, quite prolonged period of time, such as 18 hours or 24 hours.The MIC and MBC of the nanocomposite against MDR bacteria have been evaluated to identify the minimum effective dose required. The self-assembled nanostructured materials (for example, Ag•NiMn2O4) are promising anti-bacterial agent against MDR bacteria as well as an industrial sterilization system.1-4

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The future of Precision Medicine

In precision medicine, the focus is on identifying which approaches will be effective for which patients based on genetic, environmental, and lifestyle factors. Pharmacogenomics is a part of precision medicine. Pharmacogenomics is the study of how genes affect a person's response to drugs. This relatively new field combines pharmacology (the science of drugs) and genomics (the study of genes and their functions) to develop effective, safe medications and doses that are tailored to variations in a person's genes.

Research has revealed many of the molecular lesions that drive cancers. Each cancer has its own genomic signature, with tumor-specific features and features common to multiple tumor types. Cancers are a consequence of accumulating genomic damage. Inherited genetic variations contribute to cancer risk. This understanding has influenced risk assessment, diagnostic categories, and therapeutic strategies. The implementation of precision medicine through molecular profiling technologies has increasingly been integrated with standard clinicopathological evaluations to enhance diagnosis, prognostication, and prediction of clinical outcomes.Although there have been clear successes in the era of molecular characterization, the utility of NGS and other omics-based tests remains unproven on many fronts. A vision for the future of precision medicine will integrate comprehensive multi-omic tumour characterization, dynamic monitoring of liquid biopsy samples, annotation that is automated through advancements in artificial intelligence but guided by experts' clinical input, the enrolment of patients into innovative clinical trials that not only test molecular profile drug matching but also investigate the utility of different drug-assignment algorithms.The path forward in precision medicine will require not only extension beyond genomics from a technical viewpoint, but also the education and engagement of end-users such as clinicians and patients, the increase of access to genotype–drug matching through adaptive and other innovative clinical trial designs, and the promotion of data sharing to maximize knowledge gain.

Biography

Dr.Soha has completed his Ph.D. from Al Azher University, 2014 and completed his Master's in Biochemistry, faculty of pharmacy from Al Azher University, 2010. She is working as Assistant professor in Modern university for technology and information, faculty of pharmacy in the department of Biochemistry. Her research interest includes Experimental and clinical biochemistry, Nutrition, and molecular biochemistry.

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Cytosolic glucosylceramide regulates endolysosomal function in Lysosomal Storage Diseases

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Niemann-Pick type C disease (NPCD) is a devastating neurodegenerative condition most commonly due to mutations in endolysosomal NPC1. Mutations in NPC1 are associated with impaired endocytic transport via decreased endolysosomal calcium release. Endocytosis and luminal calcium are dependent on correct endolysosomal acidification and have been found to be controlled by glycolipids in neurons, melanocytes, Gaucher disease, plant vacuoles and C. elegans. NB-DNJ (miglustat) has approval for the treatment of NPCD as a GlcCer synthase inhibitor to lower lysosomal GlcCer. However, increased brain GlcCer when administered to animal models has led to wide speculation of off-target inhibition of non-lysosomal GlcCer (GBA2) breakdown. Off target inhibition of GBA2 was recently strengthened by the utility of a more specific GBA2 inhibitor AMP-DNJ as well as GBA2 knockout in NPCD mice.Several studies have shown increased pH in NPC cell culture models. We show here that disrupted endocytic trafficking in NPCD cell culture models is associated with increased endolysosomal pH using lysosensor yellow blue to label all acidic compartments. NPCD cell culture models were found to have increased endolysosomal pH and inhibition of non-vesicular glucosylceramide (GlcCer) but not GalCer transport. In contrast, inhibiting non-lysosomal glucocerebrosidase (GBA2) decreased endolysosomal pH in normal cells, reversed increased endolysosomal pH and restored disrupted BODIPY-LacCer trafficking in NPCD, Gaucher and Krabbe fibroblasts.

Biography

Dr Dan Sillence is a cell Biologist with a particular interest in the molecular role of Glucosylceramide. He has worked in the laboratories of Prof Fran Platt, Prof Gerrit van Meer and Prof Richard Pagano after completing his PhD with Prof. Sir Peter Downes, University of Dundee. He has over 35 publications in high impact journals

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Fever is not a symptom in covid-19. None of the diseases require fever as its symptom.

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We have been hearing for centuries that 'fever is not a disease but a symptom'. Physicians say that fever is a symptom of diseases like flu to cancer.

The conservative fever definition, diagnosis, and treatments are based on fever as a symptom. All the studies related to fever as a symptom of a disease have been done without knowing the Purpose of the temperature of fever is.

Without knowing the Purpose of the temperature of fever, how can fever included in the symptom definition? Temperature between 38o to 41o centigrade can be symptom of a disease? Most of the diseases may not have a fever. Sometimes it disappears. Then, is fever a symptom of which disease?

Symptom Definition is the only parameter necessary for a Symptom. As with any or all other definitions, symptom definition should describe the symptom scientifically. If it cannot describe clearly, there is no use of a symptom definition. A symptom is a departure from normal function or feeling which is noticed only by a patient, indicating the presence of disease or abnormality. One cannot be understood directly the temperature is elevated in the hypothalamus. A mechanical device is necessary to measure elevated temperature in the hypothalamus. In symptom definition, fever definition can't be found. The elevation of body temperature is not included in symptom definition.

Different cause of diseases never shows the same symptoms.

Different causes of diseases like virus, bacteria, fungi, venom, horror scene, horror dream,... never shows the same symptoms. Its actions are different and sometimes opposite. No similarities can be seen between their actions.

Elevated temperature or increased temperature never make fever or symptoms of fever. It may create hyperthermia.

None of the diseases or causes of diseases require fever as its symptom.

If the mosquito bites its virus, bacteria, venom gets deposited in the body as a result according to nature and strength of Viruses, bacteria, venom symptoms like itching, pain, and signals like colour change, inflammation may occur.

we can see the symptoms, Signals, and indications of the virus, bacteria, the venom which multiple or spreading or damages(disease) the body before fever emerge. Patients who have flu to cancer may not have a fever.

How can we separate symptoms of the disease and symptoms of fever and symptoms of rising temperatures?

In fever, both symptoms of disease and symptoms of Fever are included. Deduct symptom of disease from total symptoms, we will get symptoms of fever.

Biography

A practicing physician in the field of healthcare in the state of Kerala in India for the last 30 years and very much interested in basic research. My interest is spread across the fever, inflammation and back pain. I am a writer. I already printed and published nine books on these subjects. I wrote hundreds of articles in various magazines.

After scientific studies, we have developed 8000 affirmative cross checking questions. It can explain all queries related to fever

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