CANCER RESEARCH

Scientific Program

Scholars International Webinar on

Cancer Research and Therapeutics

THEME: "Frontiers in Cancer Research and Therapy"

May 16-18, 2022 | Virtual | Zoom meeting

11:00-17:00 GMT

- 10+ KEYNOTE SPEAKERS
- 20+ FEATURED SPEAKERS
- 10+ INTERACTIVE SESSIONS
- 15+ HOURS OF NETWORKING
- 50+ PARTICIPANTS
- 05+ WORKSHOPS
- WORLDCLASS EXHIBITIONS
- PROFESSIONAL WORLDVIEW
- B2B MEETING

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SCIENTIFIC PROGRAM

Day 1 |May 16 2022|Virtual

KEYNOTE FORUM

11:00-11:10 Opening Ceremony

11:10-11:40 GMT **Local Time** :13:10-13:40

Title: Stem cell therapy in radiotherapy from bench to Clinical Trial Evaluating the Efficacy of Mesenchymal Stromal Cell Injections for the Treatment of Chronic Pelvic Complications Induced by Radiation Therapy

Alain CHAPEL, IRSN, France

11:40-12:10 GMT **Local Time** :20:40-21:10

Title: Considerations and approaches in Drug Targeting Delivery Systems in cancer

Shinya Tajima, National Hospital Organization Shizuoka Medical Center, Japan

12:10-12:40 GMT **Local Time** :8:10 - 8:40

Title: The ocular anti-inflammatory CBD Nano emulsion safety challenge

Sun Young Park, University of Michigan, USA

Networking and Refreshments Break @ 12:40-13:00

13:00-13:30 GMT **Local Time** :9:00-9:30

Title: Engineering a novel PD-L1 checkpoint inhibitor vaccine and combination immunotherapy with a HER-2 vaccine

Pravin T. P Kaumaya, Wexner Medical Center and the James Comprehensive Cancer Center, USA

13:30-14:00 GMT **Local Time** :16:30-17:00

Title: Identification of genetic biomarkers in urine for early detection of prostate cancer.

Nedime Serakıncı, Near East University, Turkey

14:00-14:30 GMT **Local Time** :17:00-17:30

Title: Opportunities for early detection of prostate cancer in young men

Vladimir Startsev, St.-Peterburg's State pediatric medical university, Russia

14:30-15:00 GMT **Local Time** :16:30-17:00

Title: Obesity and Breast Cancer Endocrine Resistance: Progress to Understanding the Molecular Connections

Ines Barone, University Of Calabria, Italy

SCIENTIFIC PROGRAM

Day 1 |May 16 2022|Virtual

KEYNOTE FORUM

15:00-15:30 GMT **Local Time** :20:00-20:30
Title: Circulatory microRNAs (miRNAs) as a biomarker and the therapeutic target for Oral Cancer
Durairaj Sekar, Saveetha Dental College and Hospitals, India

SCIENTIFIC SESSIONS

15:30-15:55 GMT **Local Time** :10:30-10:55
Title: A Role for Proteasome 26S Subunit, Non-ATPase 3 (PSMD3), in Disease Progression and Drug Resistance of Myeloid Leukemia
Anna Eiring, Texas Tech University Health Sciences Center El Paso, USA

15:55-16:20 GMT **Local Time** :18:55-19:20
Title: Cancer: proteomics and kinomics
Jonas Cicenas, Vilnius University, LIfe Sciences Center, Lithuania

16:20-16:45 GMT **Local Time**:11:20-11:35
Title: Role of MET in melanoma and melanocytic lesions
Alessio Giubellino, University of Minnesota, USA

16:45-17:10 GMT **Local Time:** 19:45-20:10
Title: Postoperative complications in oncogynecology during Romanian COVID pandemia
Nicolae Bacalbasa, Center of Excellence in Translational Medicine, Romania

Networking and Refreshments Break @ 16:40-17:00

17:30-17:55 GMT **Local Time**:23:00-23:25
Title: Choice of place and regrets among caregivers of terminally ill pediatric malignancy cases
Kunal Das, Swami Rama Himalayan University, India

17:55-18:20 GMT **Local Time**: 22:30-22:55
Title: Light Tailoring: Impact of UV-C Irradiation on Biosynthesis, Physiognomies, Anticancerous and other Biological Activities of Morus Macroura-Mediated Monometallic (Ag and ZnO) and Bimetallic (Ag-ZnO) Nanoparticles
Sumaira Anjum, Kinnaird College for Women, Pakistan

SCIENTIFIC PROGRAM

Day 1 | May 16 2022 |Virtual

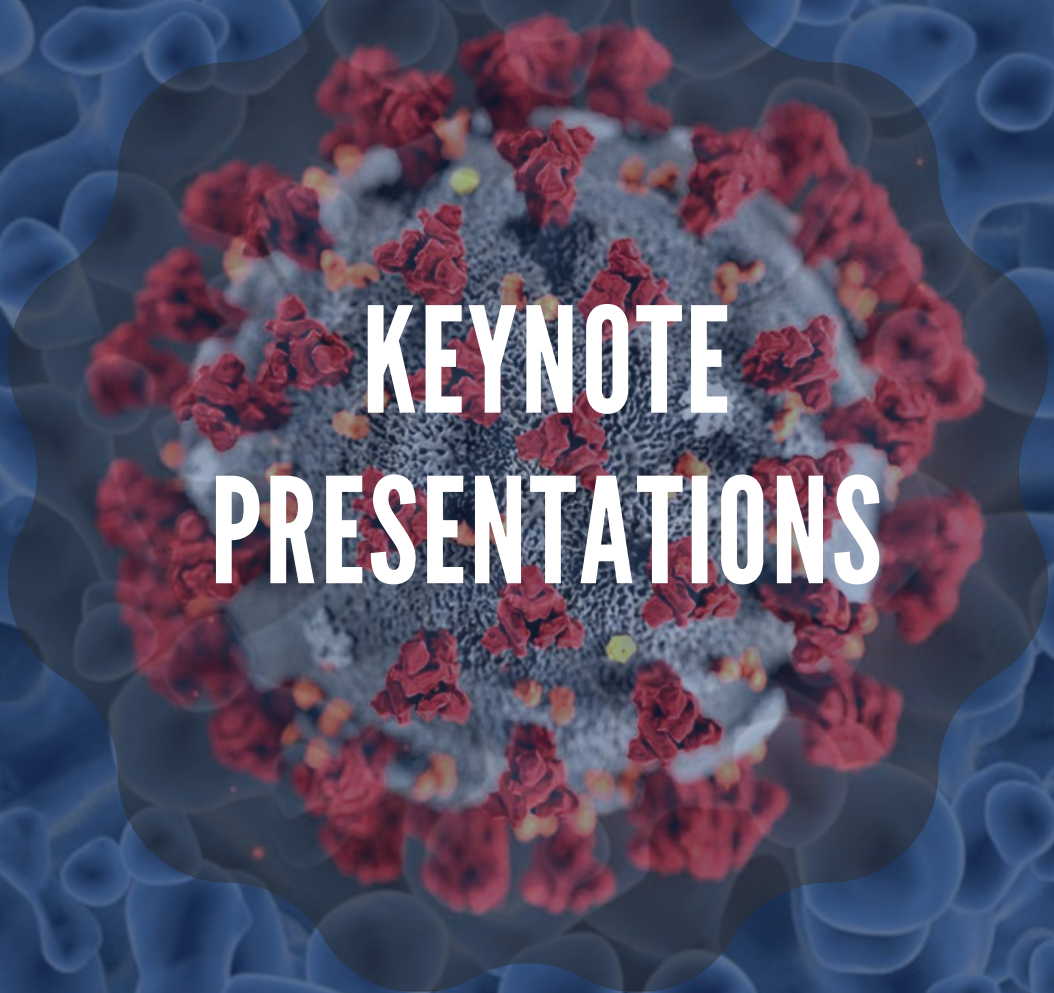
E-POSTER

17:50-18:00 GMT **Local Time** : 21:20-21:30

Title: Hypermethylated non-coding RNA genes specifically involved in the pathogenesis of ovarian cancer, the initial steps of metastasis and the colonization of secondary tumors in the peritoneum

Svetlana S. Lukina, FSBSI IGPP, Russia

CANCER RESEARCH



KEYNOTE PRESENTATIONS

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Opportunities for early detection of prostate cancer in young men

VLADIMIR STARTSEV
St.-Peterburg's State pediatric medical university, Russia.

Biography:

Vladimir Yu. Startsev - MD, Ph.D., Professor, MUDr, Oncology Dept. of the State pediatric medical university (St.-Petersburg, Russia). Head of the Urology Dept. of Private University «Saint-Petersburg Medico-Social Institute», Corresponding member of Russian Academy of Natural Science (Moscow).
·**A**ctive member of the EAU (since 2002), Russian Society of Urologists (since 2001), Russian Association of Oncological Urologists (since 2003) and Professional Association of Russian Andrologists (since 2005).
·Doctoral Degree (MSc) in "Public health and health care" (2007).
·Experienced medical monitor at clinical research organization "Accell Clinical Research, L.L.C." (2013-2015)
·Author of more than 250 publications in Russian and International peer-reviewed journals and Conference Abstract Books. Participant of more than 50 international, Russian and regional Conferences.
·The Biography is included in "Marquis Who's Who in the World", 29th edition (2012) and "2000 Outstanding intellectuals of the 21st century", 7th edition (2012).

Abstract:

Prostate cancer (PCa) is a public health problem, it ranks second in incidence in 105 countries and fifth among causes of death in 46 countries. PCa is sometimes verified in men younger 50 years of age, including the metastatic stage. Common methods for diagnosing PCa are not always accurate, the algorithm has not been finalized.

Materials and methods
We studied data on the epidemiology and prevalence of PCa in men aged 40-50 years (PubMed, CrossRef and Scopus databases), having obtained data on the probable causal relationship of factors influencing the development of PCa. Also, we perform an IHC-study on 10 PCa samples of patients 40-51 y.o. in tumor stages pT1cN0M0-pT2cN0M0 after radical surgical treatment in one clinic (Sechenov Medical University) in 2016-2019. The preoperative PSA (3.5-9.86 ng/ml) and malignancy criteria parameters (4 - ISUP-1, 4 - ISUP-2, 2 - ISUP-3) were studied. All patients underwent RARP, without technical features and postoperative complications. The study was carried out as part of a joint research program of two Russian state medical universities.

Results
When the preparations were reviewed by a third-party morphologist, the tumor in the apex of the gland was absent only in 1 case (10%), the tumor in both lobes of the gland were present in all, without perineural lymphovascular invasion and urethral lesions. A positive margin of surgical resection was noted in 1 case (0.2 cm). Due to IHC, it was found that Ki-67 was detected in 1-5% of samples, b-catenin – 3 points with membrane staining up to 100%, e-cadherin – from 1 to, maximum, 3 points (pT1cN0M0 ISUP-1). Mutations in EGFR, TP-53 and BCL-2 were not detected. Loss of heterozygosity for BRCA2 was verified in 1 case of pT2cN0M0 ISUP-2, for RB-1 – in 1 pT2aN0M0 ISUP-3, for PTEN – in 2 samples pT2cN0M0, ISUP-1 and ISUP-2.

Conclusion

The diagnosis and treatment of men younger 50 y.o. with PCa are of great medical importance. Hence, that is lack of samplings among young men, as well as the high cost of the proposed genetic studies, which leads to late diagnosis of the tumor.

It is planned to compare the obtained results of IHC with the further fate of the observed patients: indicators of the overall and cancer-specific survival, frequency of medical consultations, PSA dynamics, etc., as well as to increase the sample of the group and compare the results with the study of the control's (men over 50 years old). The study of a combination of risk factors for the development of PCa in young patients will allow us to formulate a new diagnostic approach based on personal molecular genetic information

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Stem cell therapy in radiotherapy from bench to Clinical Trial Evaluating the Efficacy of Mesenchymal Stromal Cell Injections for the Treatment of Chronic Pelvic Complications Induced by Radiation Therapy

Alain CHAPEL,
Institute for Radiation Protection and Nuclear Safety, France

Biography:

Alain CHAPEL 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 28).

Abstract:

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.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Learning from Patient Adaptation: Designing Health Technology to Empower Patients

Sun Young Park
University of Michigan, USA

Biography:

Sun Young Park, PhD is an associate professor in the School of Information and Stamps School of Art and Design at the University of Michigan. Her research focuses on evaluating and designing health information systems and technologies in both the clinical and non-clinical settings. Her studies related to designing health IT systems that support healthcare providers' information work, focusing on healthcare consumers' information needs and behaviors in the hospital setting, earned a best paper award from the Journal of International Medical Informatics Association (IMIA), was chosen for the IMIA Yearbook 2013, garnered a finalist nomination for the Diana Forsythe Award from the American Medical Informatics Association (AMIA). Her research projects have been funded by the National Science Foundation (NSF) CRII award in 2017, the Agency of Healthcare Research and Quality (AHRQ) grant in 2018, and the NSF CAREER award in 2020. She was inducted into the Inaugural Class of the ACM Future of Computing Academy in 2017. Park has served on many scientific and technical program committees for top-tier academic conferences, including ACM SIGCHI, CSCW, and DIS.

Abstract:

Successful chronic illness management requires active patient participation and effective communication among the patient, caregivers, and clinicians. However, this can be difficult, especially for more vulnerable patients, such as children who may lack the self-knowledge, sufficient communication skills, or appropriate information access. Such patients' needs, in consequence, are often overlooked, and their capacity to understand care information misjudged by providers and caregivers. In this talk, I will present my work that investigates opportunities to empower and activate pediatric patients with cancer in their illness management. The study results reveal the details of the adaptation behaviors and positive experience of pediatric cancer patients, shedding light on a need for designing Health IT systems to engage patients who have not been sufficiently involved in the existing system design as well as a need for design considerations to enhance the patients' positive experiences and promote their resilience.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Title: Engineering a novel PD-L1 checkpoint inhibitor vaccine and combination immunotherapy with a HER-2 vaccine

Pravin T. P Kaumaya,
Wexner Medical Center and the James Comprehensive Cancer Center, USA

Biography:

Kaumaya is Professor of Medicine in the Department of Ob/Gyn at the OSU Wexner Medical Center and the James Comprehensive Cancer Center. Dr Kaumaya is internationally recognized as an expert in the fields of vaccine research with emphasis on peptide vaccines for cancer. His work over 3 decades in developing B-cell epitope-based cancer vaccines is a paradigm shift in the immune-oncology landscape. Dr. Kaumaya is an elected fellow of the American Association for the Advancement of Science (AAAS), and he was elected as the treasurer of the American Peptide Society since 2009. He has lectured worldwide and has published over 130 peer-reviewed articles in major scientific journals. He is an inventor on several issued and pending patents for peptide cancer vaccines and immune-therapeutic technologies. He conducts translational research from bench to the clinic with the goal of designing and developing new combination immunotherapies and immunologic strategies for cancer treatment and prevention. Dr Kaumaya's laboratory has recently developed a PD-1-Vaxx B-cell peptide cancer vaccine and has also developed vaccines for PD-L1, CTLA-4, TIGIT, TIM3 and LAG-3 which will be developed as combination immunotherapy. This work demonstrates a growing immune-oncology platform for developing combination immunotherapy, widely considered the next frontier in treating cancer and the potential to deliver many breakthroughs in cancer care.

Abstract:

Immunotherapy by blockade of checkpoint signaling with monoclonal antibodies has shown great clinical success in several subtypes of cancer, yielding unprecedented responses and survival, albeit significant number of patients remain refractory. Both PD-1/PD-L1 and HER-2 signaling pathway inhibitors have limited efficacy and exhibit significant toxicities that limit their use. Ongoing clinical studies support the need for development of rationale combination strategies. Here, we introduce the development of a novel chimeric PD-L1 B-cell epitope vaccine that elicit a robust polyclonal B-cell antibody that inhibits tumor growth which can stimulate memory B-cell and T-cell responses and further reduce immune system suppression. We demonstrate the validity of our designed B-cell epitope vaccine was capable of inhibiting tumor growth in several syngeneic carcinoma mouse model. Additionally, we demonstrate synergistic activities in combination with a combo HER-2 vaccine.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Intraductal Papilloma and Related Lesions

Shinya Tajima
National Hospital Organization Shizuoka Medical Center. Japan

Biography:

Shinya Tajima MD, PhD from Japan. he was born in 1976 in Saitama near Tokyo. he graduated from Keio University School of Medicine. After graduated the university, working in Department of Pathology at the same institution. Then I learned general pathology. And he would like to be a specialist of breast pathology. he affiliated St. Marianna University School of Medicine which is the most breast operation number in Japanese university. he received PhD in Radiologic-Pathology from the same Graduate School of Medicine, Kanagawa, Japan. he was working at the Department of Pathology and Radiology of this latter institution. Now he am working at Department of Diagnostic Pathology of National Hospital Organization Shizuoka medical center.

Abstract:

Breast papillary lesions exhibit broad range. Tajima et al. reported in discrimination between intraductal papilloma (IDP) and endocrine ductal carcinoma in situ, new marker of CD56 is useful. Hence, detecting benign IDP correctly and exclude malignant lesion is important thing in daily pathological diagnoses. Here, in relation to IDP, we would like to present new concept of two papillary lesions at a glance IDP. In the past, lacking myoepithelial cells is thought to be invasion and means malignancy. Two cases of 68- (Case1) and 44-year-old (Case2) female are presented. They have abnormality in the breast. And they came to our hospital for further examination and treatment. Radiologically, malignancy could not completely excluded. Then, breast excision was performed. Histologically, both cases revealed papillary neoplastic lesions lined by fibrovascular core and nuclear inverse-polarity without atypia. Loss of myoepithelial cells was observed by HE, p63, and calponin. Previous report indicate CK5/6, ER, p63 and MUC3 are important for distinguishing between papillary lesions according to the differential index (based on Allred score) of ([ER total score] + [MUC3 total score])/([CK5/6 total score] + [p63 total score] + 1). Based on this analysis, our 2 cases had benign lesions. Additionally, the Ki-67 index was <1% in both cases, and no evidence of disease was observed minimum 62 months of follow-up for both cases, despite lack of additional treatment. Thus, we propose that lack of myoepithelial cells in papillary lesions do not necessarily indicate malignancy and thought to be benign. These lesions are reported and named “Nuclear inverse polarity papillary lesion lacking myoepithelial cells”. However, the name is too long and its tumor distinctiveness and rareness, someone think this tumor as “Tajima tumor” as for the advocator.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Title: Identification of genetic biomarkers in urine for early detection of prostate cancer.

Nedime Serakıncı,
Near East University, Turkey

Biography:

Nedime Serakıncı research focused on telomere-telomerase biology, cancer and stem cell biology in connection with aging. Her research expertise is in telomerase-immortalized mesenchymal stem cells and their use in gene therapy and development of tissue models for drug discovery. Prof. Dr Serakıncı's research program is focused on the molecular, cellular and developmental biology of the adult mesenchymal stem cell and aging diseases. The principle aim of the program is to develop strategic and technical approaches necessary to acquire an understanding of the mechanisms underlying stem cell self-renewal and differentiation processes. Ultimately the objective is to provide rational scientific foundations for the application of cell and gene-based therapies to the treatment of human disease and injury.
She has established two class II laboratories and 4 fully equipped genetic diagnosis and genetic research laboratories.

Abstract:

Prostate-Specific Antigen (PSA) test is the most commonly used biomarker for prostate cancer (PCa) screening as well as for the clinical diagnosis of other diseases related to prostate such as infection and inflammation. A PSA test is inexpensive, quick and easy to apply; however, it is not a tumour-specific biomarker and non-malignant diseases such as benign prostatic hyperplasia (BPH) or prostatitis can increase PSA level.

Lack of diagnostic precision of the PSA test in PCa screening causes overdiagnosis and overtreatment including unnecessary biopsies. To overcome this problem urine, blood and tissue biomarkers have been developed. However, there is still no straight-forward test or method to diagnose PCa from specimen collection to the final result.

These HOX genes have important roles during stem cell differentiation in the entire development period and it is found that HOX mutations can cause human disorders with different variation. G84E, G135E, A128D and F240L, F127C and G132E are the best-characterized genetic variants of HOXB13 that are associated with PCa. Therefore, we conduct a novel approach that gives early diagnostic information to the physician about the possible presence of PCa by sequencing and analysing the hereditary and somatic HOXB13 mutations through a small sample of patient's urine which is taken right after the DRE. Besides, to contribute to the risk assessment of PCa as a non-invasive screening tool together with clinical findings for the selection of eligible cases for PB simply and cost-effectively based on the patient's PCa mutation profile.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Title: Obesity and Breast Cancer Endocrine Resistance: Progress to Understanding the Molecular Connections

Ines Barone, University Of Calabria, Italy

Biography:

Ines Barone Achievements: 2014 Residency in Clinical Pathology. 2006 Ph.D in "Cell Biology and Drug Action in Oncology", 2003 Bachelor Degree in Chemical and Pharmaceutical Technologies Research and Professional Experiences 2019 to present Associate Professor in Biotechnology and Methods in Laboratory Medicine 2016-19. Assistant Professor in Biotechnology and Methods in Laboratory Medicine 2013-16 Research Fellow in Biotechnology and Methods in Laboratory Medicine. 2010-13 AIRC/MarieCurie Cofunded Reintegration Fellowship in Cancer Research. 2007-09 Postdoctoral Fellowship, Lester and Sue Smith Breast Center, Baylor College of Medicine, Houston (TX, USA) National and International Grants. 2019-21 Recipient of 1 Programma di Ricerca PRIN 2017 (Principal Investigator, #2017WNKSRL, 3 years) 2016-19 Recipient of 1 My First AIRC Grant (Principal Investigator, MFAG 2015 #16899, 3 years). 2013-16 ecipient of 1 Futuro in Ricerca. 2012 Grant (National Coordinator of 5 local research units, Principal Investigator of 1 local research unit, RBFR12FI27, 3 years). Author of 76 Full Papers, 68 Abstract at National and International Meetings (of which 9 Oral Presentations and 9 Awards), Total Citations: 2142, H-Index 30.

Abstract:

The prevalence of obesity has been increasing at an alarming rate in several developed and developing countries, reaching pandemic proportions over the last two decades. This growing incidence has deep clinical implications, since obesity is a key driver of serious health problems, including cancer. Indeed, prospective epidemiological studies have shown that excessive adiposity strongly impacts risk, prognosis and progression of breast cancer. Importanlty, obesity status has profound implications on therapeutic management of patients, especially related to the efficacy of standard endocrine therapies with selective estrogen receptor modulators (SERMs) or degraders (SERDs) and aromatase inhibitors (AIs). Several hypotheses have been proposed to unravel the direct link between obesity and endocrine therapy resistance. Certainly, the revised concept of adipose tissues from an inert depot for body energy to endocrine and immunologically active organs placed particular emphasis on the potential role of different obesity-related host factors in various biological processes. The pathological expansion of white adipose tissue in obesity leads to the development of a dysfunctional adipose tissue which produces adipokines, insulin-like growth factors pathways, inflammatory cytokines, estrogens, lipid metabolites, that can interact with several cancer cell-intrinsic signalings, rendering breast cancer cells resistant to endocrine treatments. Here, we provided an update of the recent epidemiological research focused on obesity-endocrine resistance link and discussed the molecular mechanisms by which obesity-associated changes may affect breast malignancy.

Because of obesity and its pathophysiological sequelae on the rise, a more detailed knowledge of this multilayered complexity has the potential to identify specific biomarkers and novel targets that may allow a personalized management of patients affected by breast cancer and obesity. In addition, being increased adiposity excess a commonly accepted modifiable risk factor, multiple opportunities for primary to tertiary prevention should be considered as a priority area of action.

Keynote Speaker
CANCER RESEARCH WEBINAR 2022

Circulatory microRNAs (miRNAs) as a biomarker and the therapeutic target for Oral Cancer

Durairaj Sekar
Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, India

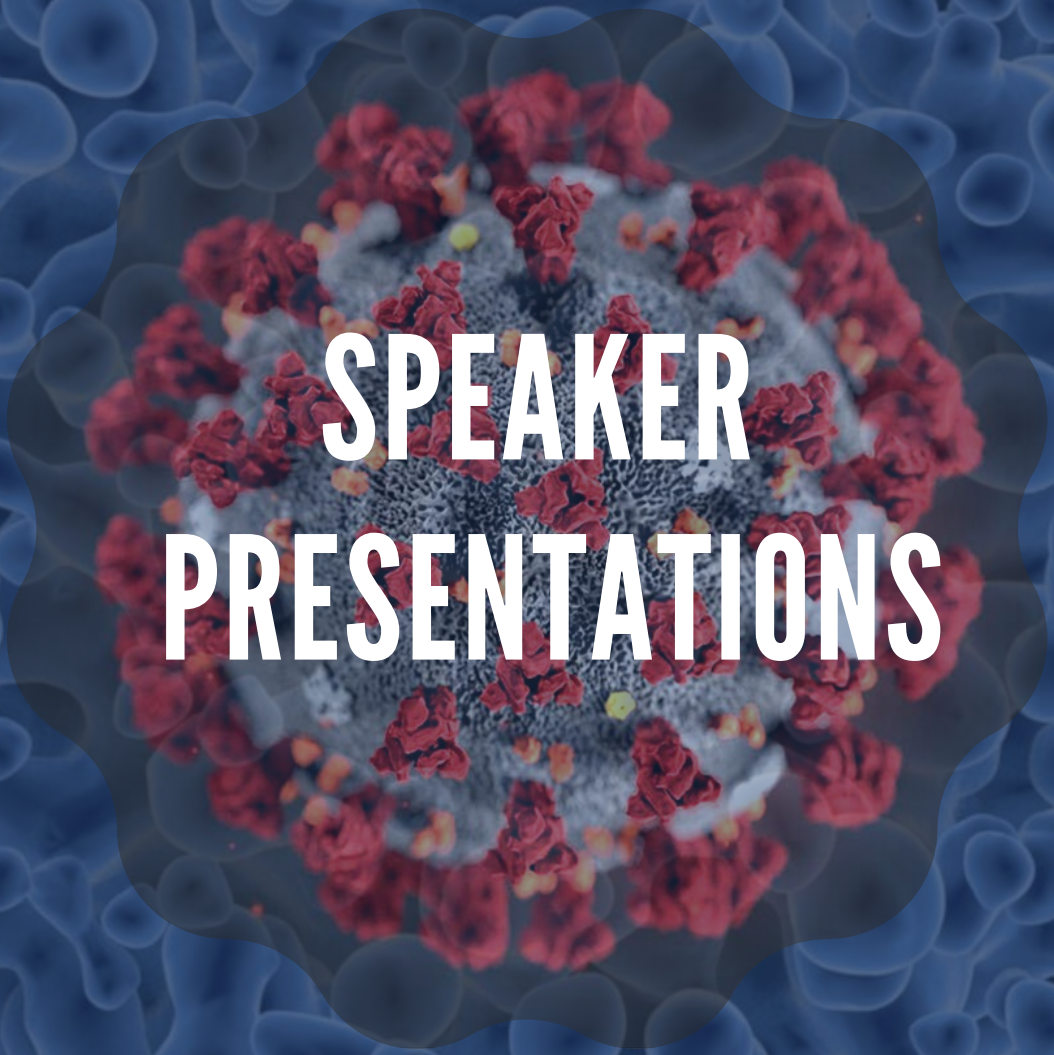
Biography:

Durairaj Sekar Ph.D received a doctoral degree in the field of biological sciences from the University of Camerino, Italy. He was awarded a doctoral fellowship from the Ministry of Italian Government and the University of Camerino, Italy (2008-2011). After that, he worked as a post-doctoral research scientist at the International Centre for Genetic Engineering and Biotechnology (ICGEB, UN), Cape Town, South Africa, from 2011-2013). He published notable scientific research and review articles in many peer reviewed high impact international journals, including the Nature group of journals. He published an article in the journal Molecular Cancer (IF: 27.4 corresponding author) in the area of Exosomal microRNAs in various types of cancer. He received two Extramural Research grants from the Indian Council of Medical Research (ICMR) and one core grant from the Department of Science and Technology (DST). His research interests are Non-coding RNAs/microRNAs biology and their regulation in non- communicable diseases like hypertension, diabetes, and various types of cancer. Currently, he is serving as an editor for peer-reviewed journals and as a peer reviewer for nature group journals. There have been 71 articles published in SCI-indexed journals. H index- 22 and i10- 27. Impact total: more than 300. PhD scholar Guidance: 4. Guided: 1

Abstract:

Circulatory microRNAs play a vital role in the early detection and treatment of various malignancies, including oral cancer. It is a small RNA whose size ranges from 18–22 nucleotides in size and is easily available in saliva, serum, blood, and other types of body fluids. Studies have implicated that many miRNAs involved in various signaling pathways to promote or reduce cancer progression. However, only a few miRNAs are detected in the case of oral cancer samples, and they need more functional and validated studies on them to prove they can be used as prognostic, diagnostic, and therapeutic targets for metastatic oral cancer progression.

CANCER RESEARCH



SPEAKER PRESENTATIONS

A Role for Proteasome 26S Subunit, Non-ATPase 3 (PSMD3), in Disease Progression and Drug Resistance of Myeloid Leukemia

Anna Eiring
Texas Tech University Health Sciences Center El Paso, USA

Biography:

Anna Eiring is an Assistant Professor in the Department of Molecular and Translational Medicine at Texas Tech University Health Sciences Center in El Paso, Texas, a Title V Hispanic-serving institution. Her lab focuses on disease progression and drug resistance in myeloid leukemias driven by constitutively active tyrosine kinases, namely BCR-ABL1-driven chronic myeloid leukemia (CML) and FLT3-mutated acute myeloid leukemia (AML). She has published nearly 50 papers on cancer biology and immunology, and has further interests in understanding the biology underlying worse outcomes for minority cancer patients.

Abstract:

Acute myeloid leukemia (AML) patients with mutations in the FMS-like tyrosine kinase 3 (FLT3) gene can be treated with tyrosine kinase inhibitors (TKIs) targeting FLT3. However, many patients develop resistance or experience adverse side effects. The ubiquitin-proteasome system (UPS) plays an important role in regulating protein homeostasis, cell cycle progression, and apoptosis, thereby representing a potential target for combination therapies. However, similar to FLT3 TKIs, proteasome inhibitors are prone to adverse side effects and drug resistance, highlighting the need for alternative therapeutic strategies. We recently reported an oncogenic role for two members of the 19S regulatory complex, 26S proteasome non-ATPase subunits 1 (PSMD1) and 3 (PSMD3), in disease progression and drug resistance of chronic myeloid leukemia (CML) and various solid tumors. We hypothesized that these genes may also play an oncogenic role in FLT3+ AML.

TCGA data revealed that high levels of PSMD3 but not PSMD1 expression correlated with worse overall survival (OS) in FLT3+ AML (p=0.00031). PSMD3 knockdown impaired colony formation of the FLT3-mutant AML cells lines, MOLM-13 and MOLM-14, correlating with increased OS in xenograft models. In contrast with our data in CML, PSMD3 knockdown had little effect on apoptosis or nuclear factor-kappa B transcription. Rather, mass spectrometry-based proteomics and pathway enrichment analyses revealed a potential role for PSMD3 in regulating energy metabolism. Consistently, PSMD3 knockdown resulted in reduced oxygen consumption rates in MOLM-14 cells. Altogether, PSMD3 may represent a novel molecular biomarker in FLT3+ AML and may be a novel target for combination therapies.

Speaker
CANCER RESEARCH WEBINAR 2022

Cancer: proteomics and kinomics

Jonas Cicenas
Vilnius University, LIfe Sciences Center, Lithuania

Biography:

Jonas Cicenas has completed PhD in 2004 in biochemistry, University of Basel, Switzerland 2011-2015 worked at Swiss Institute of Bioinformatics, CALIPHO group as biocurator-kinase expert 2017-2018 worked at Max F. Perutz Laboratories - University of Vienna Department of Microbiology, Immunology and Genetics as data scientist since 2018 works Proteomics Centre, Institute of Biochemistry, Vilnius University Life Sciences Centre as senior scientist and Vilnius Gediminas Technical University, Department of Chemistry and Bioengineering as asisstant professor.

Abstract:

Protein kinases - a big family of enzymes, which catalyse protein phosphorylation. The human genome contains more than 500 protein kinase genes. Phosphorylation is one of the most important mechanisms regulating various cellular functions, such as proliferation, apoptosis, cell cycle, growth, differentiation, etc. Misregulation of kinase activity can result in striking changes in these processes. Furthermore, misregulated kinases are often oncogenic and can be important for the development, survival and spread of cancer cells. There are various ways for kinases to become involved in cancers: misregulated amplification and/or expression, abnormal phosphorylation, gene translocation, mutation and epigenetic regulation.
Differential proteomic analysis of cancer cells was combined with phosphoproteomics and kinomics by multiplexed kinase inhibitor beads showed an increase in the activity of protein kinases involved in the cell cycle, stemness regulation and downregulation of proapoptotic kinases. Protein microarrays we used for the analysis of signaling proteins as well as phophorylated proteins. Several protens we identified as potential biomarkers in cancer as well as aortic aneurysm. Bioinformatics methods helped to identify major biological processes in which these proteins are involved and the connection of those processes with cancer development.

Speaker
CANCER RESEARCH WEBINAR 2022

Role of MET in melanoma and melanocytic lesions

Alessio Giubellino,
University of Minnesota, USA

Biography:

Giubellino is an anatomic pathologist and dermatopathologist with a research background in tumor biology and oncological translational research. He completed a residency in anatomic pathology at the National Institutes of Health (NIH) in Bethesda, followed by a fellowship in dermatopathology at the University of Miami. Dr. Giubellino is currently an Assistant Professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota, where he shares his time between clinical practice and his independent research program at the Masonic Cancer Center, with a focus on melanoma and precision medicine. He is the recipient of the inaugural Biomedical Research Awards for Interdisciplinary New Science (BRAINS) award at the University of Minnesota and a P30 supplement grant from the National Cancer Institute (NCI).

Abstract:

Melanoma represents the leading cause of death due to cutaneous malignancy. While mortality rates are slowly declining due to current modern therapeutic strategies, most patients relapse. Moreover, the number of diagnosed melanoma every year is progressively increasing. MET, the hepatocyte growth factor (HGF) receptor, is a proto-oncogene and receptor tyrosine kinase (RTK) with pleiotropic effects, including relevant roles in tumor progression, metastasis and the tumor immune environment.

The amplification of the MET gene is an important molecular features of several malignancies, including melanoma. In addition, activation of the MET/HGF pathway is an important paradigm of tumor resistance to current targeted therapies, and the assessment of its expression in patients' samples may be a valuable biomarker of tumor progression and response to these therapeutic regimens. While monotherapy selective MET inhibition has not demonstrated to be effective in clinical trials, there is hope for ongoing studies using MET inhibitors in combinations with other therapeutic approaches. Thus the major challenge in the near future is to devise better strategies to stratify patients to select the ones that will most likely benefit from these combinations.

Speaker
CANCER RESEARCH WEBINAR 2022

Postoperative complications in oncogynecology during Romanian COVID pandemia

Nicolae Bacalbasa,
Center of Excellence in Translational Medicine, Romania

Biography:

Nicolae Bacalbasa is a visceral surgeon and gynecologist in Bucharest, Romania. He focused his interest research area on the field of gynecologic oncology, special attention being given to breast, ovarian, uterine, vulvar and vaginal cancer. Other interest areas include hepato-bilio-pancreatic surgery and liver transplantation

Abstract:

COVID-19 pandemic significantly affected health services worldwide and therefore, new therapeutic protocols have been established. Moreover, a significant number of patients postponed their investigations and therefore got their diagnostics very late, and, in consequence, in more advanced stages of the disease. Meanwhile, certain patients were affected by both gynecologic oncology pathology and COVID-19 infection, making things more difficult. The aim of the current paper is to analyze the effects of COVID-19 pandemics on gynecologic oncology in Romania and furthermore, on cases in which association between gynecologic oncology procedures and COVID-19 infections developed.

Choice of place and regrets among caregivers of terminally ill pediatric malignancy cases

Kunal Das
Swami Rama Himalayan University, India

Biography:

Dr Kunal Das is a pediatric oncologist and stem cell transplant physician at Dehradun, India. He is incharge of stem cell transplant facility and Associate Professor in Pediatric oncology services at Himalayan Institute of Medical Sciences. He has about 25 publications and 3 filed patents in his credit. He is an avid writer and novelist. He has about 14Years of experience in pediatric oncology service.

Abstract:

Background- Terminal care of children dying due to advance cancer is not well defined. Often family decision of place and mode guide the care plan. We analyzed the family preference of end of life care place in pediatric oncology patients, and associated regrets.

Method- An observational qualitative study was planned. Parents/caregiver of non-curable pediatric malignancy patients who died during the years 2016–2019 were interviewed using a pre-formed open-ended questionnaire. Choice of place of terminal care with reason, fears during the last phase of child's life, most disturbing symptoms and regret of care givers, if any, were noted and analyzed.

Result- Thirty four families were interviewed by hospital visit or telephone. A median lag of 3 months of discordance was present between declaration of incurability and acceptance by the family. During terminal months, pain (87.62%) was described as the most bothersome symptom followed by respiratory distress (70.08%). Twenty four families (70%) opted for home-based terminal care, 10 (30%) for hospital-based terminal care. Regret of choice was noted in 60% families of the hospital-based care group (separation from home environment being the main reason) and 41.6% of the home-based care group (lack of access to health care personnel and pain medication being the main reasons).

Conclusion- Home-based care is the preferred option for end of life care by the care givers. Lack of community-based terminal care support system and availability of analgesics are the main areas to work on in India.

*This study is the extension of study published earlier [Supportive Care in Cancer (2020) 28:303–308]

Light Tailoring: Impact of UV-C Irradiation on Biosynthesis, Physiognomies, Anticancerous and other Biological Activities of Morus Macroura-Mediated Monometallic (Ag and ZnO) and Bimetallic (Ag-ZnO) Nanoparticles

Sumaira Anjum
Kinnaird College for Women, Pakistan

Biography:

Sumaira Anjum has her expertise in Synthesis and biomedical applications of Nanoparticles. She has synthesized a large variety of metallic and metal oxide nanoparticles and evaluate their activities for treatment of various diseases especially for cancer treatment. She is has published many papers in International Journals regarding the Nanotechnology and Nanomedicines.

Abstract:

Nano-revolution based on the green synthesis of nanomaterials is uprising all zones of human life, modeling nanotechnology a propitious platform for various biomedical applications. During synthesis of nanoparticles, various factors can control their physiognomies as well as clinical activities. Light is one of the major physical factors that can play an important role in tuning/ refining the properties of nanoparticles. In this study, biocompatible monometallic (AgNPs and ZnONPs) and bimetallic Ag-ZnONPs [(0.1/0.5) and (0.1/0.5)] were synthesized under the irradiation of UV-C light from the leave extract of Morus Macroura possessing enriched TPC and TFC as well as strong FRSA (82.39%). These green synthesized NPs were evaluated for their anti-diabetic, anti-glycation and biocompatibility activities. Furthermore, their anti-cancerous activity against HepG2 cell lines was assessed in terms of cell viability, production of reactive oxygen/nitrogen species, mitochondrial membrane potential and apoptotic caspase-3/7 expression and activity. Synthesized NPs were characterized by techniques including ultraviolet-visible spectroscopy, SEM, EDX, FTIR, and XRD. UV-C mediated monometallic and bimetallic NPs showed well defined characteristic shapes with more dispersed particle distribution, definite crystalline structures and reduced sizes as compared to their respective controls. In case of clinical activities, the highest anti-diabetic activity and anti-glycation activity was shown by UV-C mediated AgNPs. Whereas, the highest biocompatibility (IC50=14.23 ± 1.68 µg/ml against Brine Shrimp and 2.48 ± 0.32 % hemolysis of human red blood cells was shown by UV-C mediated ZnONPs. In case of anti-cancerous activities, the lowest viability (23.45%) with enhanced ROS/NOS production led to a significant disruption of mitochondrial membrane potential and greater caspase-3/7 gene expression and activity by UV-C mediated bimetallic Ag-ZnONPs (0.1/0.5). Present work highlighted the positive effects of UV-C light on the physico-chemical physiognomies as well clinical activities of NPs.

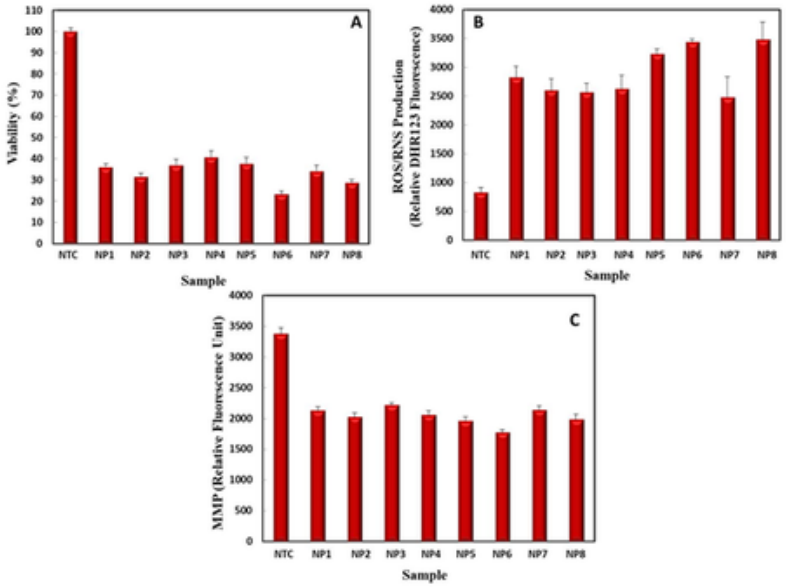


Figure 1: Anti-cancerous activities of Monometallic and Bimetallic NPs measured in terms of A) Cell viability B) Intracellular ROS/RNS productions C) Mitochondrial Membrane Potential disruption. Data is mean of three replicates ± SE. [Note: NTC: None treated cells; NP1: Control AgNPs; NP2: UV-C mediated AgNPs; NP3: Control ZnONPs; NP4: UV-C mediated ZnONPs; NP5: Control bimetallic Ag-ZnONPs (0.1/0.1); NP6: UV-C mediated bimetallic Ag-ZnONPs (0.1/0.1); NP7: Control bimetallic Ag-ZnONPs (0.1/0.5); NP8: UV-C mediated bimetallicAg-ZnONPs (0.1/0.5)]

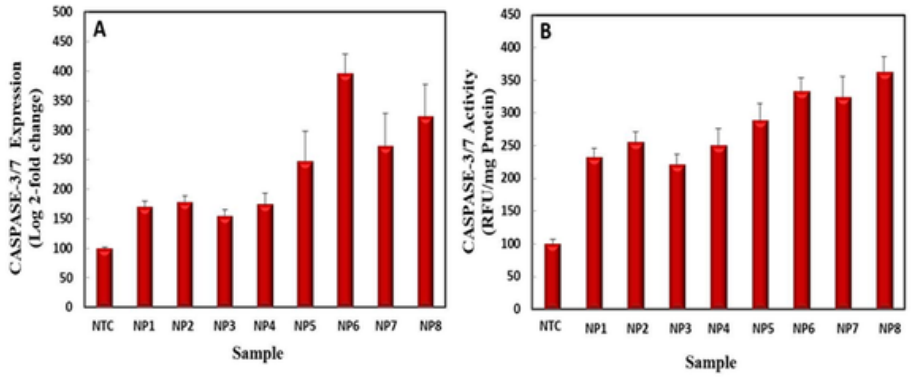


Figure 2: A) Caspase-3 gene expression in HepG2 cell lines B) Caspase-3/7 activity in HepG2 cells when exposed to Monometallic and Bimetallic NPs. Data is mean of three replicates ± SE. [Note: NTC: None treated cells; NP1: Control AgNPs; NP2: UV-C mediated AgNPs; NP3: Control ZnONPs; NP4: UV-C mediated ZnONPs; NP5: Control bimetallic Ag-ZnONPs (0.1/0.1); NP6: UV-C mediated bimetallic Ag-ZnONPs (0.1/0.1); NP7: Control bimetallic Ag-ZnONPs (0.1/0.5); NP8: UV-C mediated bimetallic Ag-ZnONPs (0.1/0.5)]

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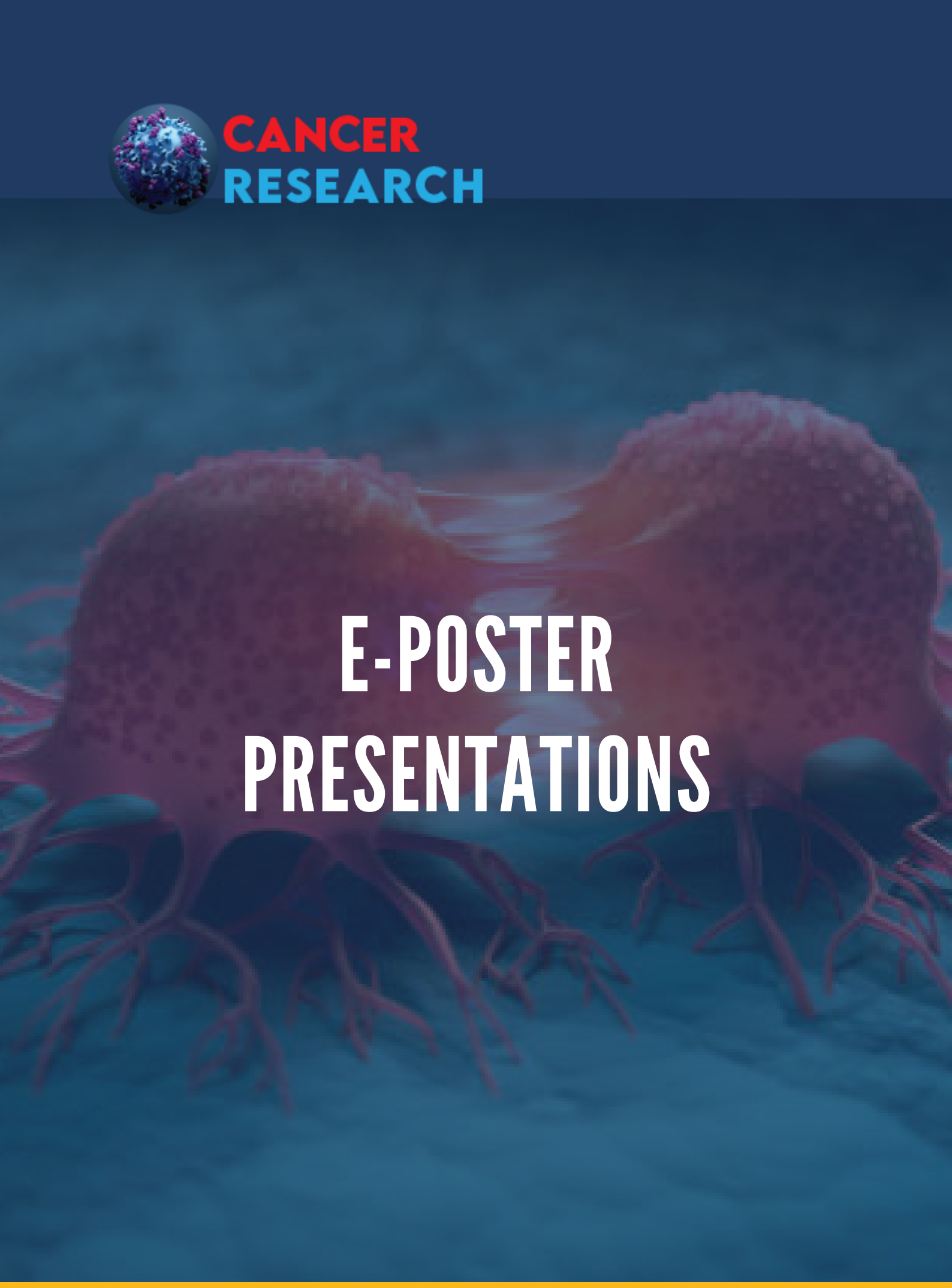

E-POSTER PRESENTATIONS

Hypermethylated non-coding RNA genes specifically involved in the pathogenesis of ovarian cancer, the initial steps of metastasis and the colonization of secondary tumors in the peritoneum

Svetlana S. Lukina,
FSBSI IGPP, Russia

Biography:

Abstract:

Epithelial ovarian carcinoma (EOC) develops asymptomatically up to the advanced stages with extensive metastasis, primarily to the peritoneum, resulting in ascites formation.

Our work was aimed to differentiate 10 aberrantly methylated miRNA genes that participate at different stages of EOC development and metastasis using methylation-specific qPCR in a representative set of clinical samples: 102 primary tumors without and with metastases (to lymph nodes, peritoneum, or distant organs) and 30 peritoneal macroscopic metastases.

Six miRNA genes (MIR124-3, MIR125B-1, MIR127, MIR129-2, MIR132, MIR339) were hypermethylated already at the early stages of ovarian cancer, while hypermethylation of MIR137, MIR203A, and MIR375 was pronounced in metastatic tumors, and their methylation was not revealed in pre-metastatic stages. We did not detect methylation of the MIR148A gene in 102 primary tumors (both metastatic and non-metastatic), however, MIR148A showed sharp methylation level increase specifically in peritoneal macroscopic metastases. We confirmed the significant relationship between methylation and expression levels for 10 miRNAs analyzed by qRT-PCR. Moreover, expression levels of five miRNAs were significantly decreased in metastatic tumors in comparison with non-metastatic ones, and downregulation of miR-203a-3p was the most significant. We also revealed an inverse relationship between the expression levels of miR-203a-3p and ZEB2 gene, which is EMT driver.

These data are consistent with our previous observation of a partial decrease in the methylation level of lncRNA genes as MEG3, SEMA3B-AS1 and ZNF667-AS1/MORT in secondary EOC tumors in peritoneum, which were highly hypermethylated in primary EOC tumors.

Taken together, these data show the role of different sets of hypermethylated ncRNAs (miRNAs and lncRNAs) at different stages of EOC metastasis and their participation as epigenetic regulators in plastic EMT–MET reversion, which is observed during colonization of metastases to other organs.
This work was supported by the Russian Science Foundation, grant no. 20-15-00368.

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