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Scientific Tracks & Abstracts

(Day 1)

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Qiong Ma, J Cancer Sci Ther 2017, 9:11 (Suppl)
DOI: 10.4172/1948-5956-C1-117

SKA1: A therapeutic target for chemo-resistance in human osteosarcoma

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The combination of aggressive surgery and neoadjuvant chemotherapy is also the major treatment for human osteosarcoma nowadays. However, the issue of chemo-resistance development has sustained and poses a great challenge. Researchers have reported that hypoxia may lead to drug resistance in many kinds of solid tumors. The mechanism is not very clear yet. The purpose of this study is to explore how hypoxia leading to chemo-resistance in osteosarcoma cells. We scanned normoxia and hypoxia cultured osteosarcoma cells *in silico* in three replicates to find the differential expressed gene under hypoxic condition, and this gene was overexpressed by lenti-virus vector, then real-time PCR and western were utilized to detect the expression of three drug resistance related genes *ABCB1*, *ABCC2*, and *GSTP1*. Cell Counting Kit-8 (CCK8) assay was performed to evaluate the proliferation of cells after lenti-virus transfected. 545 differentially expressed genes were identified based on the microarray analysis. Attention was focused on the *SKA1* gene as a possible downstream target of hypoxia by means of bioinformatics. *SKA1* overexpression reduced the expression of three multidrug resistant genes *ABCB1*, *ABCC2* and *GSTP1*. Also, we demonstrated that *SKA1* overexpression enhanced the sensitivity of two chemotherapeutic drugs used for osteosarcoma patients. Our study made an attempt to identify the downstream target genes that are altered in the hypoxia-cultured osteosarcoma cell line by microarray analysis. We demonstrated that the expression of *SKA1* was significantly decreased in a hypoxic environment. And SKA1 may function as a chemosensitizer in osteosarcoma. A strategy to enhance its expression may prove to be beneficial for the treatment of osteosarcoma.

Biography

Qiong Ma has her expertise and interest in scientific study on human osteosarcoma, especially about the proliferation, invasion and metastases of tumor cells. She has studied tumor cells under hypoxic conditions.

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Notes:

Bo Yuan et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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Enhanced cytotoxic effects of the combination of arsenite with tetrandrine against breast cancer cell line MCF-7

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To provide novel insight into the development of new therapeutic strategies to combat breast cancer using trivalent arsenic (AsIII)-based combination therapy, the cytotoxicity of a combination of AsIII and tetrandrine (Tetra), a Chinese plant-derived alkaloid, was investigated in the human breast cancer cell line MCF-7. Cytotoxicity was evaluated using cell viability, colony formation, wound healing, lactate dehydrogenase leakage and cell cycle assay. Alterations of genes associated with cell proliferation and death were analyzed using real-time PCR and western blot. Intracellular arsenic accumulation (As[I]) was also determined. Tetra significantly enhanced the cytotoxicity of AsIII against MCF-7 cells in a synergistic manner. The combined treatment upregulated the expression level of FOXO3a, and subsequently resulted in a concomitant increase in the expression levels of p21, p27 and decrease of cyclin D1, which occurred in parallel with G_0/G_1 phase arrest. Autophagy induction was also observed in the combination treatment. Importantly, combining AsIII with Tetra exhibited a synergistic inhibitory effect on the expression level of survivin. Furthermore, enhanced As[I] along with synergistic cytotoxicity was observed in MCF-7 cells treated with AsIII combined with Tetra or Ko134, an inhibitor of breast cancer resistance protein (BCRP), suggesting that Tetra or the BCRP inhibitor probably intervened in the occurrence of resistance to arsenic therapy by enhancing the As[I] via modulation of multidrug efflux transporters. These results may provide a rational molecular basis for the combination regimen of AsIII plus Tetra, facilitating the development of AsIII-based anticancer strategies and combination therapies for patients with solid tumors, especially breast cancer.

Biography

Bo Yuan has completed his PhD from Tokyo University of Pharmacy & Life Sciences and had researched in University of California, San Francisco as a Visiting Assistant Professor. He is an Assistant Professor in TUPLS. His research interests focus on the novel antitumor effect of clinically used antitumor drugs in combination with naturally occurring phytochemicals in terms of sensitization of cancer cells to drugs resulting in dosage reduction for clinical application. He has published more than 40 papers in reputed journals.

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Amar Ranjan, J Cancer Sci Ther 2017, 9:11 (Suppl)
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Rise of circulating thrombopoietin following surgery in gastrointestinal cancer patients: Correlation with a preceding increase in levels of procalcitonin

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Thrombopoietin (TPO) is a protein that is encoded by the TPO gene. It regulates the production of platelets. It is believed that plasma level of TPO is regulated by its binding to platelets and megakaryocytes. A prospective study was conducted comprising of 72 cases (32 female, 40 male) of gastrointestinal cancer, which were undergone surgery in the year 2016. It included cancer of esophagus, stomach, colon and ano-rectum. Three serial whole blood samples were taken from single patient, one preoperatively, 2nd and 3rd postoperatively on day 3 and day 5. Serum samples were stored at-80 °C. Samples were tested for TPO and PCT by ELISA Technique. Statistical analysis was done. Day 3 after surgery, patients (n=72) showed a significant thrombocytopenia followed by a reactive thrombocytosis on Day 5. Platelet recovery was preceded by a significant rise in TPO (from 162.4±118.8 pg/ml at baseline to 355.3± 304.4 pg/ml at 72 hours, P<0.0001), which in turn was preceded by a marked increase in PCT (from 141.7± 406.4 pg/ml at baseline to 659.6± 1087.0 pg/ml at 72 hours, P<0.0001). The rise of both PCT and TPO was significantly higher in all patients at an interval of 3-4 days. No correlation was found between the post-operative decrease in platelet mass and changes in either the TPO or PCT levels. Considering the change of parameters from day 3 to 5, there was rise in platelets and decrease in TPO and PCT. These changes were not found statistically significant. But statistically significant changes were noticed from day 1 to day 5 similar to day 1 to day 3. Findings suggest that circulating TPO levels, besides being controlled by changes in platelet mass, are also influenced by certain cytokines involved in oncogenesis and inflammatory process. Studies suggest that it is influenced by IL-6. It has shown activities like acute phase reactants e.g., C-reactive protein.

Biography

Amar Ranjan is an MD in Pathology, presently working as an Assistant Professor in Lab Oncology in the top most Cancer Institute of India. He has keen interest in Hemato-oncology. He actively participates in oral and poster presentations at international and national levels. He has experience of working on dermatopathology, post-mortem pathology and blood banking.

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Notes:

Kirsty Hamilton et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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A systematic review of intramedullary spinal cord ependymoma and astrocytoma

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The true impact of surgical resection and adjuvant therapies on survival in intramedullary ependymoma and astrocytoma is largely unknown. Searching of Medline, Embase and Clinicaltrials.gov databases were performed. Multivariate analyses were performed for overall survival (OS) and progression-free survival (PFS) data sets. This was achieved through a combination of Monte-Carlo methods and maximum likelihood estimation. 57 articles yielded results for 3022 patients. Gross-total resection (GTR) reduces mortality in both ependymoma and astrocytoma by a factor of 5.1. An interaction was identified between tumor grade and radiotherapy, such that for low-grade tumors, radiation treatment increased the risk of mortality 5.2 times, while for high-grade tumors radiotherapy decreased mortality by a factor of 1.9. High-grade tumors were associated with a 12 times risk of death over low-grade tumors. Adult patients were more likely to die from their disease compared with pediatric patients by a factor of 1.6. Regarding PFS, radiation treatment increased the rate of morbidity 1.9 times for both pathologies. Gender did not influence survival. 79% of patients demonstrated stable or improved functional neurological outcomes six months post-operatively. GTR improves OS in all tumor grades. Adjuvant radiation improves OS only in the presence of high-grade histology. Advancing age and high-grade histology are negative prognostic indicators. Gender does not influence survival.

Biography

Kirsty Hamilton is a Neurosurgical Trainee, currently practicing at the Princess Alexandra Hospital, Brisbane. Her research work deals with intra-medullary spinal cord tumors, which was undertaken to address a knowledge gap in the literature for intramedullary tumor treatment strategies.

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Notes:

Larysa Skivka et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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Antineoplastic drug NSC631570 inhibits C6 glioma growth in rats through the re-education of tumor-associated microglia

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Glioblastoma (GB) is one of the most devastating and fatal tumors. Therapeutic approaches targeting tumor cells have failed. GB is heavily infiltrated with myeloid cells that are collectively referred to as glioma-associated microglia/macrophages or GAM. GAM acquires the alternative, pro-invasive phenotype and creates favorable conditions for disease progression. GAM re-education seems to be an attractive therapeutic approach to GM treatment. NSC631570 is an anticancer agent that influences phagocyte migration and functional polarization. This study was aimed to investigate the effect of NSC631570 on C6 glioma growth in rats and microglia metabolic profile *in vitro* and *in vivo*. For tumor-associated hypoxia induction experiments, the rat microglial cells were treated under either normoxia (21% O2) or hypoxia (3% O2) for 48 hours *in vitro*. Intracranial drug delivery device was developed for the local treatment of glioma-bearing rats with NSC631570. Tumor-bearing animals received seven intracranial injections of the drug at 3 days interval starting from the second day after C6 cell transplantation. NSC631570 re-polarized hypoxic microglia to pro-inflammatory metabolic profile *in vitro*. The treatment of tumor-bearing rats with NSC631570 was associated with prolongation of their life by 18%. This effect was accompanied by the increase in the number of phagocytizing $CD14^+$ cells in the microglia fraction without the alteration in their endocytosis intensity. The frequency of $CD206^+$ cells was moderately increased in the fraction of both $CD14^+$ and CD14-microglial cells. Oxidative metabolism of GAM was moderately down-regulated by the drug. Intracranial introduction of the preparation was associated with the sharp increase of NO generation by microglial cells. Locally introduced NSC631570 can re-educate GAM. This repolarizing effect is associated with moderate tumor growth inhibition and might be considered as an important part of the mechanism of tumor-inhibiting action of the drug.

Biography

Larysa Skivka has completed her PhD from RE Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology, NAS of Ukraine and Postdoctoral studies from Taras Shevchenko National University of Kyiv. Currently she is a Professor of the Educational and Scientific Centre, Institute of Biology and Medicine of Taras Shevchenko National University of Kyiv, Ukraine, Head of the Department of Microbiology and Immunology. Her area of scientific activity includes immunomodulation as a component of adjuvant cancer therapy, functional polarization of phagocytes in the pathogenesis of inflammatory diseases.

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Naila Amin Nitu, J Cancer Sci Ther 2017, 9:11 (Suppl)
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Modeling the cost-effectiveness of using digital breast tomosynthesis in breast screening program

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Background: In Australia, breast cancer was the second most common cause of cancer death in 2011. Currently, all Australian women aged 50-69 years are invited to attend biennially in population-based breast screening program with Digital Mammography (2D). But 2D screening fails to detect at least 15-30% of breast cancers. However, with Digital Breast Tomosynthesis (3D), more cancers would be expected to be diagnosed earlier compared to 2D screening.

Objective: The study aims to compare the cost-effectiveness of biennial screening with 3D with biennial screening with 2D for women aged 50-69 years from the healthcare system perspective.

Method: A Markov model was constructed to capture the costs and effectiveness of screening and diagnostic pathway of both screening programs including the stage-specific treatment of breast cancer. All estimates for model input were derived from published articles. This model was created with a time horizon of 35 years and 2 weeks cycle length has been created. One-way and probabilistic sensitivity analysis was conducted.

Results: The base-case analysis estimated that the discounted incremental cost-effectiveness ratio is $40,923/QALY gained for 3D screening compared to 2D screening. 3D screening reduces the chance of biopsy and ultrasonography and increases the cancer detection at an early stage compared to 2D. Our analysis indicates that women spend comparatively more time in better health states with 3D screening compared to 2D. However, sensitivity analysis shows that considerable amount of uncertainty exists around these estimates.

Conclusion: Biennial 3D screening seems to be cost-effective compared to 2D screening for women aged 50-69 years. These results could be a strong basis to consider the implementation 3D screening in the population-based breast screening program. However, further research is warranted with better transition probability parameters of the effectiveness of 3D screening with clinical trials which would give more precise estimates of the cost-effectiveness analysis.

Biography

Naila Amin Nitu is a Bangladeshi Physician practising Gynaecology and Public Health. She has 14 years of experience in maternal health, community health services, clinical service delivery, training and research. She currently serves as the Deputy Director of the Health Economics Unit of Ministry of Health and Family Welfare of Bangladesh Government. She engages in conducting policy-oriented research on health economics and works for advancing the Universal Health Coverage for Bangladeshi population and maintains collaboration with the donor organizations. She has spent more than 10 years to work for the underprivileged women to ensure their better health. She has achieved Fellowship of College of Physicians and Surgeons in 2009 from Bangladesh and obtained an Australian Award Scholarship in 2015 to pursue Master of Public Health with specialisation in Health Economics and Economic Evaluation at the University of Melbourne where she graduated in 2016.

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Kwong Soke Chee et.al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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Differential effects of fatty acid binding protein-7 (FABP7) in triple negative breast cancer cell lines HS578T and MDA-MB-231 under hypoxic condition

Kwong Soke Chee, Rhodes A, Taib N A and Chung I
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Triple negative breast cancer (TNBC) is the most aggressive subtype which contributes to approximately 10% of breast cancer cases. The absence of ER-, PR- and HER2 receptors in TNBC leaves this subtype with no targeted therapy. Recent studies showed that FABP7 is shown to significantly overexpress in TNBC tissues compared to other subtypes. FABPs are known to be lipid chaperones and they can affect lipid metabolism. To date, the evidence on its prognostic role in TNBC is contrasting. Liu et al. (2012) shows that FABP7 expression correlates with lower overall and recurrence-free survival. In contrast, two other studies by Alshareeda, et al. (2012) and Zhang, et al. (2010) demonstrates that FABP7-positive basal tumors are associated with better prognosis. Hence, we aim to investigate the function of FABP7 in TNBC through *in vitro* models. Despite the excessive FABP7 expression in TNBC tissue, FABP7 protein was not detected in TNBC cell lines (HS578T and MDA-MB-231). However, chronic hypoxia increased FABP7 mRNA expression in these cell lines. It indicates that FABP7 might only be important in hypoxic conditions. As FABP7 was not naturally expressed in the TNBC cell lines used in our study, we generated FABP7-transduced TNBC cell lines with lentivirus particles. MTT assay showed that FABP7 caused reduced cell viability in HS578T but not MDA-MB-231 cells under hypoxic condition. This study shows that FABP7 can cause cell death in HS578T cells under hypoxic condition but not in the more aggressive MDA-MB-231 cells. More research on FABP7 in TNBC is warranted as it could serve as a potential molecular target for TNBC.

Biography

Kwong Soke Chee is currently a PhD student at University of Malaya, Malaysia. Her research interest includes molecular biology and lipidomics. In specific, her project focuses on the function of FABP7 in TNBC. Besides doing bench work in the laboratory, she also has experience in recruiting patients for breast cancer cohort. In year 2015, she was selected to participate in Novartis International Biocamp in Basel, Switzerland to gain insights into research and business environment in pharmaceutical industry.

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Eleane Ayou, J Cancer Sci Ther 2017, 9:11 (Suppl)
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Gestational trophoblastic diseases: A seven-year observational study in the city of Duhok, Iraq

Eleane Ayou
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Background: Although Gestational trophoblastic disease (GTD) is mostly a benign condition, malignant transformation may occur. It is the most curable disease among all the gynecological malignancies especially when early diagnosis is made. Despite that, there is paucity of local data regarding the burden of this condition, its management and outcome.

Objectives: The study aims to assess the data for the prevalence, treatment protocols and outcome of GTD in cases admitted to Azadi Teaching Hospital, Duhok, Iraq.

Methods: A retrospective and prospective analysis of cases documented during the period from February 2011 to July 2017. Ninety-six (96) cases were included. Retrospective data were retrieved from patients' medical records and GTD special registry while prospective data were recorded in patients' record at Gynecology Clinic and were updated with each visit. Human chorionic gonadotropin hormone level was the main investigation we based on for diagnosis and follow up.

Results: Seventy (72.9%) cases were multigravida, forty-three (44.8%) were between the age 21-30 years. All patients had vaginal bleeding at presentation. Only five (5.2%) cases had extra uterine metastasis, two (2%) patients had history of previous GTD, four (4.2%) patients ended with hysterectomy 23 (23.9%). Patients were solely treated with dilatation and curettage without need for any chemotherapy, 62 (64.8%) patients were treated successfully with single agent chemotherapy while 11 (11.6%) patients needed multi-agent's chemotherapy.

Conclusion: No patient died from GTD during this period. Among patients who needed chemotherapy, most of our cases had good response to single agent chemotherapy.

Biography

Eleane Ayou has completed her Bachelor's degree in General Medicine and Surgery from Duhok University, College of Medicine and currently she is a Trainee toward specialty in Obstetrics and Gynecology. She is one of the Senior Registrars at both Duhok Maternity Hospital and Azadi Teaching Hospital in the city of Duhok, Iraq.

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Scientific Tracks & Abstracts

(Day 2)

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Wassil Nowicky, J Cancer Sci Ther 2017, 9:11 (Suppl)
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The angiogenic properties of NSC-631570

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Another important feature of medical preparation NSC-631570 after its selective effect (in therapeutic dosage it kills only cancer cells leaving the healthy cells undamaged) is the inhibition of the formation of the new blood vessels supplying a tumor. Due to these anti-angiogenic properties NSC-631570 administered before surgery brings about better demarcation of the tumor from surrounding tissue and the tumor encapsulation. This alleviates the surgical removal of tumors what has been confirmed in breast cancer studies. In *in vitro* tests; NSC-631570 inhibited in a dose dependent manner, the proliferation of human endothelial cells without exerting cytotoxic effect. The angiogenesis inhibition was observed on the capillary formation model. This inhibition of the neoangeogenesis prevents the metastasis formation as well.

Biography

Wassil Nowicky is the Director of Nowicky Pharma and President of the Ukrainian Anti-Cancer Institute, Vienna, Austria. He is the author of over 300 scientific articles dedicated to cancer research. He is the Member of the New York Academy of Sciences, Member of the European Union for Applied Immunology and the American Association for Scientific Progress, Honorary Doctor of the Janka Kupala University in Hrodno, Doctor Honoris Causa of the Open International University on Complex Medicine in Colombo, Honorary Member of the Austrian Society. He has received the award for Merits of National Guild of Pharmacists of America, the award of Austrian Society of Sanitary, Hygiene and Public Health Services and others.

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Ivy Chung et.al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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Effects of medroxyprogesterone acetate (MPA) in activating progesterone receptor signaling in benign and cancer-associated fibroblasts of the endometrium

Ivy Chung, Omar I S, Adenan N A and Woo Y L
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Medroxyprogesterone acetate (MPA) is used for conservative treatment for endometrial cancer (EC); however, patients often develop progesterone resistance. Most typical and atypical endometrial hyperplasia shows regression after MPA treatment. Primary type 1 EC responds moderately to MPA therapy (50-70%). Yet, MPA treatment only offers 10-20% response rates and survival of less than one year in advanced and recurrent EC. It was shown that secretion from normal fibroblast cells inhibit while cancer fibroblasts cells promote the proliferation of EC cells. Interestingly, a recent study showed that progesterone receptor (PR) expression in normal fibroblast is important for progesterone inhibitory effects on cancer cells. It has also been shown that estrogen is responsible for increasing PR expression. However, it is still largely unknown, if and how, fibroblasts from endometrial cancers modulate EC response to progesterone. BAF and CAF were isolated from human endometrial primary cultured cells using antibody-conjugated magnetic beads. Fibroblast and epithelial markers expression, and progesterone receptor (PR) expression were determined using quantitative real-time PCR (qRT-PCR) and western blotting. PR nuclear translocation was determines using immunofluorescence assay. Cell viability was determined using MTT assay. Fibroblasts expressed high levels of fibroblast markers but not epithelial cell markers indicating minimal epithelial cells contamination. Both BAF and CAF expressed varied levels of PR expression. PR nuclear translocation occurs within 6 hours of 10 nM MPA treatment in BAFs and CAFs. Their response to MPA growth inhibition was similar (20% growth inhibition when compared to vehicle) after treated with 1-400 nM MPA for 72 hours. The cell viability was 22% and 9% lower in BAFs and CAFs, respectively following 100 nM MPA treatment in the presence of 10 nM E2 compared to MPA alone. Our data suggests that PR signaling in CAF can be activated, and but has lower response to combination of MPA and estrogen treatment.

Biography

Ivy Chung is an Associate Professor at Department of Pharmacology, Faculty of Medicine, University of Malaya, Malaysia. She is trained as a Cancer Pharmacologist and interested in tumor microenvironment research. She has published numerous articles on tumor angiogenesis and cancer-associated fibroblasts. Her current interest is to study hormonal and survival pathways that are activated in the tumor-host cell interaction that could contribute to aggressiveness of the cancer as well as to development of therapy resistance.

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Notes:

Yong Zheng et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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The inactivation of tumor suppressor genes by increased H3K9me3 drives spontaneous transformation of rat MSCs

Yong Zheng and Liu He
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Rodent mesenchymal stromal cells (MSCs) have been demonstrated to spontaneously undergo tumorigenic transformation after long term *ex vivo* culture. The mechanism leading to the MSCs spontaneous transformation is unclear. To investigate the role of H3K9me3 for the spontaneously transformation of MSCs, the pre-senescent and transformed MSCs were prepared according to the criterion described previously. H3K9me3 target genes were evaluated with ChIP-on-chip arrays. The expression of tumor suppressor genes (*CDKN2B, CDKN2C, CDKN1C* and *PTEN*) was evaluated with RT-qPCR, these gene-associated H3K9me3 were quantified with chromatin immunoprecipitation (ChIP) and the DNA methylation levels were analyzed with bisulfite DNA sequencing (BSP). We found that there were 1277 genes in pre-senescent MSCs and 2519 genes in transformed MSCs targeted by H3K9me3 (Cutoff: FDR≤0.05). The genes associated with H3K9me3 are related to the catalogs of cell differentiation, development and nucleotide and protein metabolism. The expression of *CDKN2B, CDKN2C, CDKN1C* and *PTEN* were obviously decrease in transformed MSCs, with an up-regulation in genes associated H3K9me3 and CpG sites methylation. These results demonstrate that an H3K9me3 enhanced DNA methylation contributes a crucial role in the spontaneous transformation of MSCs.

Biography

Yong Zheng is presently studying the mechanisms underlying these changes of epigenetic modification. He has his research interests in understanding the molecular mechanisms of tumorigenesis. He has identified the key stages during the spontaneous of rat mesenchymal stem cells and his previous study identified, for the first time, an Ezh2/H3K27me-independent and H3K9me enhanced aberrant DNA methylation of the *p16* gene, which might be an epigenetic signature for MSC spontaneous transformation.

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Lijuan Liu et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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HBV regulates the alternative splicing of KIAA0101 in hepatocellular carcinoma via suppressing SRSF2

Lijuan Liu, Youyi Liu, Yan Zhou, Ping Zhou and Fan Zhu
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Hepatocellular carcinoma (HCC) is one of the most-deadly human cancers. Approximately half of HCC cases are associated with chronic hepatitis-B virus (HBV) infection. Our previous work demonstrated that transcript variant (tv) 1 of KIAA0101, which is overexpressed in HCC, prevented apoptosis after Doxorubicin treatment through inhibiting p53. In this study, we found aberrant expression of KIAA0101 tv1 in HBV-related HCC (HBV-HCC) compared with non-virus-related HCC (non-virus HCC). HBV increased the alternative splicing (AS) of KIAA0101 tv1 in HCC cells. Splicing minigene reporter assay revealed that HBV promoted KIAA0101 exon 3 inclusion, additionally, HBV down-regulated serine/arginine-rich splicing factor-2 (SRSF2), which inhibited the inclusion of KIAA0101 exon 3 through a putative cis-element GATTCCTG. These results implicated that HBV regulated aberrant AS of KIAA0101 through suppression of SRSF2 function via a motif on KIAA0101 exon 3 in HCC. Moreover, our studies showed that KIAA0101 tv2 was overexpressed in the adjacent non-tumorous tissues (NTs) compared with HCC tissues. Interestingly, unlike KIAA0101 tv1, KIAA0101 tv2 failed to promote NIH3T3 cell growth, colony formation, tumor xenografts, motility and metastasis, showing the opposite function of tv1. Furthermore, KIAA0101 tv2 restrained HCC progression partially by down-regulating KIAA0101 tv1. KIAA0101 tv2 could increase the activity of p53 via competing with KIAA0101 tv1 for binding to P53. HBV could induce HCC through increasing the splicing of KIAA0101 tv1 and decreasing the expression levels of KIAA0101 tv2 via suppression of SRSF2. KIAA0101 tv2 exhibits the property of tumor-suppressor and acts as a negative regulator of oncogenic KIAA0101 tv1. KIAA0101 tv2 is likely to be a promising strategy to develop novel HCC therapeutic drug.

Biography

Lijuan Liu has her expertise in study of the molecular mechanisms of aberrant alternative splicing in hepatitis-B virus-associated hepato-carcinogenesis. Her research explores the role of HBV on the aberrant regulation of host genes' AS in HBV-associated HCC.

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Pavol Szabo et al., J Cancer Sci Ther 2017, 9:11 (Suppl)
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Intercellular crosstalk in malignant melanoma

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The incidence of melanoma is increasing globally and curability of advanced disease is still limited. Similarly, to other types of tumors, the microenvironment is an important factor participating in the control of melanoma biological behavior. The principal cell populations of melanoma microenvironment include cancer-associated fibroblasts (CAFs), keratinocytes, tumor-infiltrating leukocytes, endothelia of newly formed vessels and also, the composition of extracellular matrix (ECM) must be taken into account in this context. The CAFs produce various types of extracellular matrix proteins and a wide panel of cytokines/chemokines and growth factors such as IL-6, IL-8, and CXCL-1. CAFs isolated from melanoma stimulate aggressive behavior of tumor cells. Effect of CAF on other types of cells present in melanoma was also well documented. From this point of view, CAFs as the key factor of melanoma microenvironment represent a potential target for a new type of anti-tumor therapy.

Biography

Pavol Szabo completed PhD and has lot of experience in studying cancer-stroma interactions. He has focused his research in most abundant cell compartment of cancer microenvironment cancer associated fibroblasts (CAFs) and use tissues, *in vitro*, *in vivo* samples to understand role of CAFs to form reactive cancer microenvironment.

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Soluble CD160 enhances antitumor immunity against murine H22 hepatocarcinoma in vivo

Han Xiao
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The glycosylphosphatidylinositol (GPI)-anchored CD160 is a relatively new co-inhibitory molecular and expressed mainly on cytolytic cells such as $CD8^+$ T cells, natural killer (NK) T cells, NK cells and some $CD4^+$ T cells. CD160 on virus-specific CD8+ T cells is up-expressed and generally associated with T cells dysfunction, thus considered as an exhaustion marker. However, CD160 expression on tumor-specific $CD8^+$ T cells and its contribution to tumor-specific $CD8^+$ T cells impairment remains unclear. Here, we try to decipher its regulatory effects on tumor-specific $CD8^+$ T cells function and seek a new target for tumor therapy. $CD8^+$ T cells were separated from splenocytes of tumor-bearing mice and expression of CD160 and HVEM was detected. A eukaryotic expression plasmid (psCD160) was constructed, expressing the extracellular domain of murine CD160 (soluble CD160) which could block the interaction between CD160 and HVEM by binding HVEM. The activity of proliferation and cytolysis and secretion of cytokines by $CD8^+$ T cells were measured after being incubated by soluble CD160 and specific tumor antigen. The treatment effects of psCD160 combined with tumor-vaccine *in vivo* were observed by H22 hepatocarcinoma mice tumor model. The up-regulated expression of CD160 on $CD8^+$ T cells from tumor-bearing mice was confirmed to be related to cells dysfunction, characterized by lower proliferation and cytotoxicity activity and less cytokine production. Soluble CD160 enhances $CD8^+$ T cells, resulting in increased IFN-γ, IL-2 and TNF-α secretion and cytolysis against target tumor cells *in vitro*. The administration of soluble CD160 accompanied with tumor-vaccine inhibited tumor growth and prolonged the survival of tumor-bearing mice. Expression of CD160 defined a relatively decreased activity subset of $CD8^+$ T cells and soluble CD160 augments immunological activity and function of tumor-specific $CD8^+$ T cells and acquired significant treatment effects against existent tumor cells *in vivo*.

Biography

Han Xiao has graduated from the Clinical Medicine Department of Tongji Medical College of Huazhong University of Science and Technology. She has received a Doctor's degree in Molecular Biology. Her research interests are in tumor research, treat primary tumor and metastasis by the combination delivery of chemotherapy drugs, tumor vaccine and gene therapy to activate or block some signal transduction.

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