An AACR Special Conference in Cancer Research

Protein Translation and Cancer

February 3-6, 2010
Loews Coronado Bay Resort
Coronado, CA

Wednesday, February 3

7:00 p.m.-8:00 p.m. Opening Session *Commodore C,D,E*

Chairperson: Nahum Sonenberg, McGill University, Montréal, QC, Canada

Introduction

Historical evidence for association of protein synthesis and cancer development
Nahum Sonenberg

Keynote Address

MicroRNA regulation of translation
Phillip A. Sharp, MIT Koch Institute for Integrative Cancer Research, Cambridge, MA

8:00 p.m.-9:30 p.m. Welcome Reception *Bay Terrace*

Thursday, February 4

7:00 a.m.-8:00 a.m. Continental Breakfast *Bay Terrace*

8:00 a.m.-10:00 a.m. Session 1 *Commodore C,D,E*

Translation Factors in Cancer Biology: Insights from Cancer Cells, Animal Models, and Human Tumors

Chairperson: Carol L. Prives, Columbia University, New York, NY

Translation control of cancer via the mTOR and MAPK pathways
Nahum Sonenberg, McGill University, Montréal, QC, Canada

The funnel factors 4E-BP1 and eIF4E in human carcinomas
Santiago J. Ramón y Cajal, Vall d'Hebron University Hospital, Barcelona, Spain

Eukaryotic initiation factor 6 is rate-limiting for transformation and tumorigenesis
Stefano Biffo, San Raffaele Scientific Institute, Milan, Italy

The TRC8 E3 ubiquitin ligase is sterol-regulated and interacts with lipid and protein biosynthetic pathways*
Robert M. Gemmill, Medical University of South Carolina, Charleston, SC

Targeting the protein translation factor eIF4E with ribavirin: A novel therapeutic avenue in human cancer*
Wilson Miller, Jr., McGill University, Montréal, QC, Canada

10:00 a.m.-10:30 a.m. Coffee Break *Commodore Foyer*

10:30 a.m.-1:00 p.m. Session 2 *Commodore C,D,E*

Nucleolar Stress and Extraribosomal Functions of Ribosomal Proteins in Cancer
Chairperson: Davide Ruggero, UCSF Comprehensive Cancer Center, San Francisco, CA

Regulation of p53 and Mdm2 by ribosomal proteins
Carol L. Prives, Columbia University, New York, NY

Translational regulation of p53 after DNA damage
Michael B. Kastan, St. Jude Children's Research Hospital, Memphis, TN

Ribosome biogenesis, cell cycle check points, and cancer progression
George Thomas, University of Cincinnati, Cincinnati, OH

A noncoding viral RNA acts to lower levels of a host microRNA in virally transformed T cells
Joan A. Steitz, Yale University School of Medicine, New Haven, CT

Silencing of ribosomal protein S9 elicits a multitude of p53-dependent cellular responses*
Mikael S. Lindström, Karolinska Institute, Stockholm, Sweden

PIM1 oncoprotein is destabilized by ribosomal stress and inhibits cell cycle progression*
Fabrizio Loreni, University of Rome Tor Vergata, Roma, Italy

1:00 p.m.-3:00 p.m. Lunch provided

3:00 p.m.-5:00 p.m. **Session 3** *Commodore C,D,E*

Altered rRNA and tRNA Metabolism in Cancer Development
Chairperson: George Thomas, University of Cincinnati, Cincinnati, OH

tRNA expression and cancer
Robert J. White, The Beatson Institute for Cancer Research, Glasgow, United Kingdom

Transcriptional and epigenetic control of rRNA synthesis
Ingrid Grummt, German Cancer Research Center, DKFZ-ZMBH-Alliance, Heidelberg, Germany

RNA Polymerase I: A novel target in the treatment of MYC-driven malignancy
Ross Hannan, Peter MacCallum Cancer Centre, East Melbourne, Australia

A mechanism of IRES-mediated translation: A target for hepatitis C virus and tumorigenesis?*
Sunnie R. Thompson, University of Alabama at Birmingham, Birmingham, AL

Human MDR1 common haplotype containing "silent" mutations cause protein conformation alternation and increases anthracycline resistance in recombinant LLC-PK1 cells*
Andy K.L. Fung, National Cancer Institute, Bethesda, MD

5:00 p.m.-7:00 p.m. **Poster Session A and Reception** *Commodore A,B*

Friday, February 5

7:00 a.m.-8:00 a.m. **Continental Breakfast** *Bay Terrace*

8:00 a.m.-10:00 a.m. **Session 4** *Commodore C,D,E*

Protein Synthesis Control of Cell Growth and Metabolism in Cancer
Chairperson: Ross Hannan, Peter MacCallum Cancer Centre, East Melbourne, Australia

Influences of AMPK activations such as metformin on proliferation, apoptosis, and protein translation
Michael Pollak, McGill University, Montréal, QC, Canada

Title to be announced
Tak W. Mak, The Campbell Family Institute for Breast Cancer Research, Toronto, ON, Canada

Translational control of cellular senescence by CPEB
Joel D. Richter, University of Massachusetts Medical School, Worcester, MA

Resistance to discodermolide, a microtubule stabilizing agent and senescence inducer, is 4E-BP1 dependent*
Suzan L. Chao, Albert Einstein College of Medicine, Bronx, NY

Loss of PDCD4 derepresses translation of antiapoptotic genes in glioblastoma*
Lindsay E. Jordan, Apoptosis Research Centre, Ottawa, ON, Canada

10:00 a.m.-10:30 a.m. Coffee Break *Commodore Foyer*

10:30 a.m.-12:30 p.m. Session 5 *Commodore C,D,E*

Genetic Syndromes with Cancer Predisposition Associated with Mutations in Translational Components
Chairperson: Akiko Shimamura, Fred Hutchinson Cancer Research Center, Seattle, WA

Ribosomal disorders in marrow failure and cancer predisposition
Akiko Shimamura

Ribosome synthesis and the inherited bone marrow failure syndromes
Steven R. Ellis, University of Louisville, Louisville, KY

Genetic disruption of tRNA synthetase-interacting factors renders tumor susceptibility
Sunghoon Kim, Seoul National University, Seoul, Republic of Korea

Deregulation of p27 and p53 IRES-mediated translation contributes to the cancer susceptibility syndrome dyskeratosis congenita*
Cristian Bellodi, University of California, San Francisco, CA

Inactivation of the p53 tumor suppressor in mammary epithelial cells through defect in mRNA translation mediated by dyskerin*
Lorenzo Montanaro, Alma Mater Studiorum, University of Bologna, Bologna, Italy

12:30 p.m.-2:00 p.m. Lunch provided

2:00 p.m.-4:00 p.m. **Session 6** *Commodore C,D,E*

Translational Control and Key Checkpoints in Cancer Progression
Chairperson: Robert J. Schneider, NYU School of Medicine, New York, NY

Translational control of breast cancer
Robert J. Schneider

Translational control of cell phenotype in the hypoxic tumor microenvironment
Bradly G. Wouters, Ontario Cancer Institute, Toronto, ON, Canada

The translation initiation factor eIF2α plays a critical role in Myc-induced tumorigenesis
Constantinos Koumenis, University of Pennsylvania, Philadelphia, PA

FUSE-binding protein 1 is a rapamycin-induced factor that represses nucleophosmin translation to control cell growth*
Mary E. Olanich, Washington University School of Medicine, Saint Louis, MO

An essential role of the PKR-eIF2α phosphorylation pathway in PTEN function*
Zineb Mounir, McGill University, Montréal, QC, Canada

4:00 p.m.-5:00 p.m. **Late-Breaking Abstracts Session** *Commodore C,D,E*

Chairperson: Jeremy R. Graff, Eli Lilly and Company, Indianapolis, IN

Translation initiation factor eIF4E as a predictive marker of trastuzumab resistance in breast cancer*
Stephan Vagner, INSERM U563, Toulouse, France

Dominantly transforming oncoproteins modulate responses to nutrient deprivation by deregulating eEF2 kinase and translation elongation*
Gabriel Leprivier, BC Cancer Research Centre, Vancouver, BC, Canada

MAPK integrating kinase controls cap-independent translation and cell-type-specific cytotoxicity of an oncolytic poliovirus*
Christian Goetz, Duke University, Durham, NC

4Ei-1 is a cell-permeable prodrug of the eIF4E cap-binding antagonist, Bn^{7}GMP*
Yan Jia, University of Minnesota, Minneapolis, MN

5:00 p.m.-7:00 p.m. **Poster Session B and Reception** *Commodore A,B*

Saturday, February 6

7:00 a.m.-8:00 a.m. **Continental Breakfast** *Bay Terrace*

8:00 a.m.-10:00 a.m. **Session 7** *Commodore C,D,E*

Signal Transduction Pathways that Act on Translational Control in Cancer
Chairperson: Gerhard Wagner, Harvard Medical School, Boston, MA

Genetic dissection of the oncogenic PI3K-Akt-mTOR pathway reveals druggable addiction to translational control via 4EBP1-eIF4E
Davide Ruggero, UCSF Comprehensive Cancer Center, San Francisco, CA

mTOR, S6KI, and protein synthesis
John Blenis, Harvard Medical School, Boston, MA

mTOR and the control of growth
David M. Sabatini, MIT Whitehead Institute for Biomedical Research, Cambridge, MA

INK128, an orally active TORC1/2 kinase inhibitor, blocks protein translation and cell growth correlating with potent and broad antitumor activity*
Christian Rommel, Intellikine, Inc., La Jolla, CA

Translational regulation of cell cycle arrest by endogenous mTOR inhibition induced by ionizing radiation in glioblastoma multiforme*
Karim Y. Helmy, Memorial Sloan-Kettering Cancer Center, New York, NY

10:00 a.m.-10:30 a.m. **Coffee Break** *Commodore Foyer*

10:30 a.m.-1:00 p.m. **Session 8** *Commodore C,D,E*

Targeting Translational Control for Cancer Therapy: The Clinical Face of Translational Control
Chairperson: Nancy H. Colburn, National Cancer Institute-Frederick, Frederick, MD

Targeting eukaryotic translation initiation factor 4E (eIF4E) for cancer therapy
Jeremy R. Graff, Eli Lilly and Company, Indianapolis, IN

Title to be announced
Neal Rosen, Memorial Sloan-Kettering Cancer Center, New York, NY

Tumor suppressor Pdcd4 targets translation initiation to inhibit tumorigenesis and tumor progression in mice and humans
Nancy H. Colburn

Inhibitors of translation initiation as antitumor agents
Gerhard Wagner, Harvard Medical School, Boston, MA

Novel multiplex PI3-kinase inhibitors potently inhibit Ras-mutated tumors via suppression of eIF-4E-mediated protein translation*
Mark Hamilton, Progenics Pharmaceuticals, Inc., Tarrytown, NY

Targeting post-transcriptional control in cancer for drug discovery: Case studies of VEGF and Bmi-1*
Thomas W. Davis, PTC Therapeutics, Inc., South Plainfield, NJ

*Indicates proffered presentation from selected abstracts