



An AACR Special Conference

CELLULAR HETEROGENEITY IN THE TUMOR MICROENVIRONMENT

February 26–March 1, 2014 • San Diego, CA

Conference Co-Chairpersons

M. Celeste Simon, Abramson Cancer Research Institute, University of Pennsylvania, Philadelphia, PA
Mary Helen Barcellos-Hoff, New York University School of Medicine, New York, NY
Michele De Palma, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Tumor blood vessels and the extracellular matrix play a significant role in disease progression; however, a variety of infiltrating immune cells, cancer-associated fibroblasts, and angiogenic endothelial cells play critical functions in sustaining cell proliferation, evading growth suppressors, promoting survival, activating invasion and metastasis, and reprogramming energy metabolism. This conference highlighted recent advances made in deciphering the role of adaptive and innate immune cells in the tumor microenvironment, metabolic adaptation, cell interactions within the tumor microenvironment, and translational potential of targeting the tumor microenvironment for therapeutic options. The comprehensive program attracted over 350 attendees and provided a unique forum that facilitated the exchange of ideas between basic and translational scientists in order to bridge the gap between discovery and therapy.

The AACR would like to thank the following organizations for their generous support of this conference.

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The AACR thanks the following organizations for their generous support of the travel awards provided at this conference.

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Conference Program

Wednesday, February 26

4:00 p.m.-9:00 p.m. Registration Open

7:00 p.m.-8:00p.m. Welcome and Opening Remarks

Keynote Talk

Tumor-derived exosomes initiate the metastatic microenvironment

David C. Lyden, Weill Cornell Medical College, New York, NY

8:00 p.m.-10:00 p.m. Dessert Reception

Thursday, February 27

7:00 a.m.-8:00 a.m. Continental Breakfast

8:00 a.m.-10:00 a.m. **Session 1: Tumor-Associated Blood Vessels and Lymphatics**
Session Chairperson: Kari Alitalo, University of Helsinki, Helsinki, Finland

Macrophage entry in hypoxia: Implications for cancer and angiogenesis

Massimiliano Mazzone, Catholic University of Leuven, Leuven, Belgium

Role of the microenvironment in modulating responses to anti-angiogenic drugs

Napoleone Ferrara, UCSD Moores Cancer Center, San Diego, CA

Combinatorial targeting of endothelial growth factor pathways

Kari Alitalo

Dermal lymphatic vessels are required for the induction of local inflammation in a B16 F10 murine melanoma*

Amanda Lund, Oregon Health & Science University, Portland, OR

Rebastinib, a selective TIE2 kinase inhibitor, decreases TIE2-expressing macrophages, reduces metastasis, and increases survival in murine cancer models*

Daniel L. Flynn, Deciphera Pharmaceuticals LLC, Lawrence, KS

10:00 a.m.-10:30 a.m. Break

*Short talks from proffered papers.

10:30 a.m.-12:30 p.m. Session 2: Innate Immune Cells in the Tumor Microenvironment
*Session Chairperson: Michele De Palma, Swiss Federal Institute of Technology
Lausanne (EPFL), Lausanne, Switzerland*

Cancer-promoting immunity

Mikael J. Pittet, Massachusetts General Hospital, Boston, MA

Granulocytic cells in metastasis

Swarnali Acharyya, Columbia University, New York, NY

Use of mouse and zebrafish tumor models to study the role of macrophages in tumor relapse after chemotherapy

Claire E. Lewis, The University of Sheffield Medical School, Sheffield, UK

Macrophage phenotype drives tumor program via epigenetic machinery carried in secreted microvesicles*

Tim D. Eubank, The Ohio State University, Columbus, OH

Targeting tumor-associated macrophages with a novel anti-CSF1R antibody in cancer patients*

Carola H. Ries, Roche Pharma Research and Early Development Oncology, Penzberg, Germany

12:30 p.m.-2:30 p.m. Free Time/Lunch on Own

2:30 p.m.-4:30 p.m. Session 3: Adaptive Immune Cells in the Tumor Microenvironment
*Session Chairperson: Lisa M. Coussens, OHSU Knight Cancer Institute,
Portland, OR*

Cancer-associated inflammation facilitates metastatic breast cancer and counteracts chemoresponsiveness

Karin de Visser, The Netherlands Cancer Institute, Amsterdam, The Netherlands

Inflammation and cancer: Immune cells as targets for anticancer therapy

Lisa M. Coussens

From the immune contexture to the immunoscore in the era of cancer immunotherapy

Jerome Galon, INSERM, Paris, France

Predictive immune biomarker signatures in the tumor microenvironment of melanoma metastases associated with response to tumor-infiltrating lymphocyte (TIL) therapy*

Jie Qing Chen, The University of Texas MD Anderson Cancer Center, Houston TX

Lymphocyte invasion of basal breast tumors is associated with wild-type p53*

David A. Quigley, University of Oslo, Oslo, Norway

4:30 p.m.-6:30 p.m. Poster Session A and Reception
Posters will be available for extended viewing until 7:00 p.m.

*Short talks from proffered papers.

Friday, February 28

7:00 a.m.-8:00 a.m. Continental Breakfast

8:00 a.m.-10:00 a.m. **Session 4: Translational and Therapeutic Potential of the Tumor Microenvironment**

Session Chairperson: Zena Werb, UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA

Building the metastatic microenvironment

Zena Werb

Targeting master regulators of damage responses in the tumor microenvironment

Peter S. Nelson, Fred Hutchinson Cancer Research Center, Seattle, WA

The role of bone microenvironment in the lethal progression of prostate cancer

Christopher J. Logothetis, The University of Texas MD Anderson Cancer Center, Houston, TX

Neutralizing the activity of murine TGF- β receptor 2 promotes a differentiated tumor cell phenotype and inhibits pancreatic cancer metastasis*

Rolf A. Brekken, UT Southwestern, Dallas, TX

Targeting tumor microenvironment with selective small-molecule inhibitors of CDK8/19*

Igor B. Roninson, University of South Carolina, Columbia, SC

10:00 a.m.-10:30 a.m. Break

10:30 a.m.-12:30 p.m. **Session 5: Tumor Microenvironment and Metabolic Adaptation**

Session Chairperson: Peter S. Nelson, Fred Hutchinson Cancer Research Center, Seattle, WA

Fibrosis and cancer

Raghu Kalluri, The University of Texas MD Anderson Cancer Center, Houston, TX

Targeting endothelial metabolism: Principles and strategies

Peter Carmeliet, Vesalius Research Center, Leuven, Belgium

A hypoxic microenvironment influences pancreatic cancer progression

M. Celeste Simon, Abramson Family Cancer Research Institute, University of Pennsylvania, Philadelphia, PA

A genome-wide RNAi screen reveals a protective role of decreased lipogenesis under hypoxia*

Melissa M. Keenan, Duke University, Durham, NC

Pharmacological targeting of protein synthesis in cancer-associated fibroblasts abrogates pancreatic tumor chemoresistance*

Corrine Bousquet, INSERM U1037 - Toulouse Cancer Research Center, Toulouse, France

*Short talks from proffered papers.

12:30 p.m.-1:30 p.m. Lunch

1:30 p.m.-3:30 p.m. Poster Session B

3:30 p.m.-5:30 p.m. **Session 6: Cell Interactions in the Tumor Microenvironment**
Session Chairperson: M. Celeste Simon, Abramson Cancer Research Institute, University of Pennsylvania, Philadelphia, PA

The Tumor Microenvironment of Metastasis (TMEM) as an emergent behavior required for breast cancer dissemination

John S. Condeelis, Albert Einstein College of Medicine, New York, NY

Overcoming tumor resistance to VEGF blockade by co-targeting ANG2/TIE2 signaling and macrophages

Michele De Palma, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

Oscillating innate immune cells promote and maintain therapeutic resistance

Gabriele Bergers, University of California, San Francisco, CA

Hematopoietic system aging has profound effects on the breast tumor microenvironment and cancer progression*

Sandra S. McAllister, Harvard Medical School, Boston, MA

Biological insights into tumor-bone marrow microenvironment interactions derived from a humanized murine model*

Jessica Sigmans, University Medical Center Utrecht, Utrecht, The Netherlands

Saturday, March 1

7:00 a.m.-8:00 a.m. Continental Breakfast

8:00 a.m.-9:45 a.m. **Session 7: Brain Tumor Microenvironment**
Session Chairperson: Kenneth J. Pienta, Johns Hopkins University School of Medicine, Baltimore, MD

Title to be announced

Luis F. Parada, UT Southwestern Medical Center, Dallas, TX

Intratumoral heterogeneity in glioblastoma

Joan Seoane, Vall d'Hebron Institute of Oncology, Barcelona, Spain

A brain metastasis-promoting role for cathepsin S identified from analysis of tumor- and stroma-supplied proteolytic networks

Johanna Joyce, Memorial Sloan-Kettering Cancer Center, New York, NY

Epigenetic regulation of MYC drives dynamic transition between tumor initiating states in glioblastoma*

Clark C. Chen, University of California, La Jolla, CA

*Short talks from proffered papers.

9:45 a.m.-10:00 a.m. Break

10:00 a.m.-12:15 p.m. Session 8: The Evolving Tumor Microenvironment

Session Chairperson: Gabriele Bergers, University of California, San Francisco, CA

Multiplexing TGF β in the tumor microenvironment

Mary Helen Barcellos-Hoff, New York University School of Medicine, New York, NY

Fibroblast recruitment and activation in breast cancer progression

Clare Isacke, Institute of Cancer Research, London, United Kingdom

Of niche construction, and loss of homeostasis: New insights into the cancer diaspora

Kenneth J. Pienta, Johns Hopkins University School of Medicine, Baltimore, MD

Spatio-temporal heterogeneity in the tumor microenvironment influences the evolutionary dynamics of drug resistance*

Shannon Mumenthaler, University of Southern California, Los Angeles, CA

In vivo targeting of stromal-derived factor-1 as a strategy to prevent myeloma cell dissemination to distant bone marrow niches*

Aldo M. Roccaro, Dana-Farber Cancer Institute, Boston, MA

The prognostic power of stromal reactivity: An integrated approach to prostate cancer evolution*

Ziv Frankenstein, Moffitt Cancer Center, Tampa, FL

12:15 p.m.-12:30 p.m. Closing Remarks and Departure

*Short talks from proffered papers.