Metabolism, Diet and Disease:
Cancer and metabolism

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28-30 May 2014
Georgetown University Hotel and Conference Center, Washington DC, USA

Program

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CONFERENCE PROGRAM

DAY ONE: WEDNESDAY 28 MAY 2014

11:30	Registration
14:00	Welcome remarks by the organizers

Session 1:	Oncogenic drivers and vulnerabilities of altered cancer cell metabolism I. Chair: Karen Vousden
14:15	Metabolic heterogeneity in cancer Ralph DeBerardinis, University of Texas Southwestern Medical Center, USA
14:45	Altered metabolism to support different tumor cell populations Matthew Vander Heiden, Massachusetts Institute of Technology, USA
15:15	One-carbon and redox metabolism Joshua Rabinowitz, Princeton University, USA
15:45	Selected talk - Metabolic analysis of the loss of *Rb1 in vivo* Brandon Nicolay, Harvard Medical School, USA
16:00	Selected talk - Fructose-2,6-bisphosphate links glucose to survival and growth Jason Chesney, University of Louisville, USA
16:15	Sponsored talk - Going deep: probing metabolic flexibility in tumor spheroids Brian P Dranka, Seahorse Bioscience
16:30	Coffee Break

	Special Lecture. Chair: J Michael Bishop
17:00	Keynote Speaker Nutrition and metabolic factors in cancer causation and prevention Elio Riboli, Imperial College, London, UK
17:45 – 19:15	Poster Session 1 and Welcome Reception

DAY TWO: THURSDAY 29 MAY 2014

	Special Lecture. Chair: Ralph DeBerardinis
08:30	Keynote Speaker A hypothetical means of treating or preventing cancer Steven McKnight, University of Texas Southwestern Medical Center, USA

Session 2:	Oncogenic drivers and vulnerabilities of altered cancer cell metabolism II. Chair: Ralph DeBerardinis
09:15	Oncogenic switching of hypoxia signalling pathways Peter J Ratcliffe, University of Oxford, UK
09:45	Selected talk - Acetyl-coA Synthetase 2 promotes acetate utilization and maintains cell growth under metabolic stress Zachary Schug, CR-UK The Beatson Institute, Glasgow, UK

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10:00   Selected talk - Antagonistic effects of MYC and hypoxia in channeling glucose and glutamine into *de novo* nucleotide biosynthesis
Andrew Lane, University of Kentucky, USA

10:15   Sponsored talk - Essential amino acids: a powerful tool in supporting cancer patients
Evasio Pasini, OncoQOL

10:30   Coffee Break

Session 3:   Oncogenic drivers and vulnerabilities of altered cancer cell metabolism III. Chair: Lewis Cantley

10:55   Role of autophagy in K-RAS- and B-RAF-driven lung cancers
Eileen White, Rutgers Cancer Institute of New Jersey, USA

11:25   The role of p53 in metabolic adaptation
Karen Vousden, Beatson Institute for Cancer Research, Glasgow, UK

11:55   Selected talk - Defining the genetic determinants of mitochondrial bioenergetics
Nathan Lanning, Van Andel Research Institute, Grand Rapids, MI, USA

12:10   Selected talk - The mitochondrial pyruvate carrier as a mediator of the Warburg Effect and its impact on cancer growth and metabolism
John Schell, University of Utah School of Medicine, Salt Lake City, USA

12:25   Lunch

Session 4:   Metabolic links to cancer I. Chair: Michael Pollak

13:20   Transformation by mutant IDH and 2-hydroxyglutarate
William G Kaelin, Dana-Farber Cancer Institute, USA

13:50   AMPK – roles in nutrient sensing and in cancer
Grahame Hardie, University of Dundee, UK

14:20   Regulation of metabolism by a neuroendocrine FGF signaling pathway
David Mangelsdorf, University of Texas Southwestern Medical Center, USA

14:50   Selected talk - Loss of SIRT3 leads to a compensatory shift in cellular metabolism promoting cancer cell growth
Eoin McDonnell, Duke University Medical Center, Durham, USA

15:05   Selected talk - A *Drosophila* model linking diet-induced metabolic disease and cancer
Susumu Hirabayashi, Icahn School of Medicine at Mount Sinai, USA

15:20   Coffee Break

Session 5:   Metabolic links to cancer II. Chair: Michael Pollak

15:45   Regulation of growth and metabolism
David Sabatini, Massachusetts Institute of Technology, USA

16:15   Decoding metabolic reprogramming by the AMPK pathway
Reuben Shaw, Salk Institute, USA

16:45   The high colon cancer risk in African Americans can be reduced by dietary modification
Stephen J O'Keefe, University of Pittsburgh, USA

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17:15	Selected talk - AMPK regulated metabolic programing: oncogenic or growth suppressive? Evolving lessons from genetic and pharmacologic studies Biplab Dasgupta, Cincinnati Children's Hospital Medical Center, USA
17:30	Selected talk - Metformin targets the GTPase Rac1 to inhibit prostate cancer cell migration Frédéric Bost, C3M, Nice & IPBS, Toulouse, France
17:45 – 19:15	Poster Session 2 with Pre-Dinner Drinks
19:45 – 22:30	Conference dinner

DAY THREE: FRIDAY 30 MAY 2014

Session 6:	The metformin paradox – biguanides and energy metabolism. Chair: Chi Van Dang
08:30	Biguanide therapy for diabetes and cancer & a novel methyltransferase that regulates energy expenditure and adiposity and is elevated in many cancers Barbara Kahn, Harvard Medical School and Beth Israel Deaconess Hospital, USA
09:00	Energy balance at the organism and cellular level: effects of biguanides Michael Pollak, McGill University and Jewish General Hospital, Canada
09:30	Metformin, mitochondria and cancer Navdeep Chandel, Northwestern University, Chicago, USA
10:00	Effects of biguanides on oxidative phosphorylation Judy Hirst, MRC Mitochondrial Biology Unit, Cambridge, UK
10:30	Coffee Break

Session 7:	Towards metabolism-based cancer therapies I. Chair: J Michael Bishop
11:00	On-target inhibition of glutaminase diminishes cell autonomous MYC-mediated tumorigenesis Chi Van Dang, Abramson Cancer Center, University of Pennsylvania, USA
11:30	PI3 kinase and disease Lewis Cantley, Weill Cornell Medical College and New York-Presbyterian, USA
12:00	Can inhibiting insulin/IGF signaling with dietary carbohydrate restriction play a role in treatment/prevention of cancers? Eugene Fine, Albert Einstein College of Medicine, New York, USA
12:30	Lunch

Session 8:	Towards metabolism-based cancer therapies II. Chair: J Michael Bishop
13:30	What cancer is teaching us about cellular metabolism Craig Thompson, Memorial Sloan-Kettering Cancer Center, USA
14:00 – 15:30	Panel discussion: Is cancer preventable? The influence of diet on cancer Chair: Gregory Petsko