

# Nobel Conference No 63

## The Cell Cycle and Cell Death in Disease

Date: June 8-11, 2016

Place: Nobel Forum, Nobels Väg. 1, Karolinska institutet

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The aim of the Conference is to discuss the importance of dysregulation of cell cycle/cell death programs in the pathogenesis of human disease and to use modulators of these programs as therapeutic tools.

### **June 8, 2016**

12.00-13.45 – Registration

13.45 – 14.00 Welcome to the Conference

#### **Session 1: Cell Cycle and genome integrity**

Chair: Boris Zhivotovsky (Karolinska Institutet, Stockholm)

14.00 – 14.30 Paul Nurse (The Francis Crick Institute, UK):

*Controlling the cell cycle*

14.30 – 15.00 Judith Campisi (Buck Institute for Research on Aging, USA):

*Cellular senescence: Getting out of cycle*

15.00 – 15.30 Jiri Bartek (Karolinska Institutet, Sweden):

*Genome integrity maintenance: Mechanisms and relevance for cancer development and treatment*

#### **15.30 – 16.00 – Coffee**

#### **Session 2: Cell Cycle and genome integrity**

Chair: Maria Masucci (Karolinska Institutet, Sweden)

16.00 - 16.30 Tim Hunt (The Francis Crick Institute, UK):

*Switches and Latches: The control of entry into mitosis*

16.30 – 17.00 Camilla Sjögren (Karolinska Institutet, Sweden):

*Chromosome dynamics during the cell cycle – linked by DNA supercoiling?*

17.00 - 17.30 Thanos D. Halazonetis (Geneva University, Switzerland):

*Role of oncogene-induced DNA replication stress in cancer development and therapy*

17.30 – 18.15 **Keynote lecture:** Stephen J. Elledge (Harvard Medical School, USA): *Identification of new components of DDR-induced cellular senescence*

#### **18.30 – Reception**

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**June 9, 2016**

## **Session 3: Cell Death mechanisms**

Chair: Richard Lockshin (Queens College, City University of New York, USA)

09.00 – 09.30 Xiaodong Wang (National Institute of Biological Sciences, China):

*Mitochondrial pathways of programmed cell death*

09.30 – 10.00 Shigekazu Nagata (Osaka University, Japan):

*Exposure of phosphatidylserine to the cell surface*

10.00 – 10.30 Adi Kimchi (Weizmann Institute of Sciences, Israel):

*Monitoring the dynamics of protein-protein interactions in cells during the process of autophagy and apoptosis: from basic science to a therapeutic vision*

**10.30 - 11.00 – Coffee**

## **Session 4: Cell Death mechanisms**

Chair: Daniel Klionsky (University of Michigan, USA)

11.00 - 11.30 Mauro Piacentini (University of Rome “Tor Vergata”, Italy):

*Ambra1 a key regulator of autophagy and its implications in HIV pathogenesis*

11.30 – 12.00 Boris Zhivotovsky (Karolinska Institutet, Sweden):

*Autophagy regulation in cancer cells in response to prolonged starvation*

12.00 – 12.30 Aaron Ciechanover (Technion – Israel Institute of Technology, Israel):

*Monoubiquitination as a Novel Proteasomal Degradation Signal: Mechanistic and Biomedical Implications*

**12.30 - 14.00 – Lunch**

## **Session 5: Cell death and cancer therapy**

Chair: Bengt Westermark (Uppsala University, Sweden)

14.00 – 14.45 **Keynote lecture:** Maria Blasco (CNIO, Spain):

*Targeting telomeres in cancer*

14.45 – 15.15 Scott Lowe (Memorial Sloan Kettering Cancer Center, USA):

*Tumor suppression*

15.15 – 15.45 Douglas Hanahan (Swiss Institute for Experimental Cancer Research, Switzerland):

*Circumventing adaptive resistance to cancer therapies by co-targeting cancer hallmarks: case studies combining inducers of cell death with inhibitors of tumor angiogenesis*

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**15.45 – 16.15 - Coffee**

## **Session 6: Cell death and cancer therapy**

Chair: Marie Arsenian-Henriksson (Karolinska Institutet, Sweden)

16.15 – 16.45 Antony Letai (Dana-Farber Cancer Institute, Harvard Medical School, USA):  
*Matching the right drugs to the right patients in cancer via mitochondria*

16.45 – 17.15 Klaus-Michael Debatin (Ulm University, Germany):  
*Targeting tumor stem cells in preclinical models of leukemia and glioblastoma by modulators of cell death and survival pathways*

17.15 – 17.45 Thomas Helleday (Karolinska Institutet, Sweden):  
*Molecular mechanism how oxidative DNA damage kills cells*

**19.00 Dinner**

**June 10, 2016**

## **Session 7: Immunosurveillance**

Chair: Rune Toftgård (Karolinska Institutet, Sweden)

09.00 – 09.30 Guido Kroemer (Université Paris Descartes, France):  
*Immunogenic cell death in anticancer immunosurveillance*

09.30 – 10.00 Patrizia Agostinis (Catholic University, Belgium):  
*Harnessing endoplasmic reticulum stress for immunotherapy against cancer; from translational medicine to molecular mediators*

10.00 – 10.30 Peter Krammer (DKFZ, Germany):  
*Receptor mediated apoptosis and annexin induced self-tolerance*

**10.30 - 11.00 – Coffee**

## **Session 8: Cell death and inflammation**

Chair: Helena Jernberg-Wiklund (Uppsala University, Sweden)

11.00 - 11.45 **Keynote lecture:** Vishva Dixit (Genentech, USA):  
*Gasdermin-D mediates LPS-induced non-canonical inflammasome signaling downstream of caspase-11*

11.30 – 12.00 Michael Karin (University of California, San Diego, USA):  
*The autophagy receptor p62/SQSTM1 promotes carcinogenesis but suppresses Inflammation*

12.00 – 12.30 Junying Yuan (Harvard Medical School, USA):  
*Regulation of Necroptosis and Inflammation by RIPK1*

**12.30 - 14.00 – Lunch**

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### Session 9: Cell death and inflammation

Chair: Patrik Ernfors (Karolinska Institutet, Sweden)

14.00 – 14.30 Hans-Uwe Simon (University of Bern, Switzerland):  
*Neutrophils and eosinophils undergo necroptosis under inflammatory conditions*

14.30 – 15.00 Marie-Lise Gougeon (Pasteur Institute, France):  
*Innate sensing of viral infections: The Janus face of dendritic cells and contribution of HMGB1*

### Session 10: p53-family and cell death

Chair: Thierry Soussi (Karolinska Institute, Sweden)

15.00 – 15.30 Gerry Melino (University of Rome "Tor Vergata", Italy):  
*The p53 family in cancer biology*

#### 15.30 – 16.00 - Coffee

16.00 – 16.30 David Lane (Karolinska Institutet, Sweden):  
*The expression and regulation of mutant and wild type p53 protein in normal and tumor epithelia*

16.30 – 17.00 Xin Lu (Ludwig Institute, UK):  
*From cell death to sudden death: a p53/iASPP story*

17.00 – 17.30 Andreas Strasser (Walter and Elize Hall Institute, Australia):  
*How does the tumor suppressor p53 protect us against cancer development?*

17.30 – 18.00 Klas Wiman (Karolinska Institutet, Sweden):  
*Targeting mutant p53 for efficient cancer therapy*

#### 19.00 Dinner

### June 11, 2016

#### Session 11 Cell death and neurodegeneration

Chair: Pierluigi Nicotera (DZNE, Germany)

09.00 – 09.30 David C. Rubinsztein (Cambridge University, UK):  
*Autophagy, a guardian against neurodegeneration.*

09.30 – 10.00 Bertrand Joseph (Karolinska Institutet, Sweden):  
*Guilt by association, caspase-3 regulates microglia polarization*

10.00 – 10.30 Michael Heneka (DZNE, Germany):  
*Innate immune activation in Alzheimer's disease*

#### 10.30 – 11.00 – Coffee

## The Cell Cycle and Cell Death in Disease

### Session 12: Tumor metabolism and treatment

Chair: Klas Wiman (Karolinska Institute, Sweden)

11.00 – 11.30 Tak Mak (University of Ontario, Canada):

*Fire and water are good servants but bad masters*

11.30 – 12.00 Brent R. Stockwell (Columbia University, USA):

*Ferroptosis: Death by lipid peroxidation and regulation by metabolism*

12.00 – 12.45 **Keynote lecture:** Craig B. Thompson (Memorial Sloan Kettering Cancer Center, USA):

*Metabolic regulation of cell survival and proliferation*

12.45 – 13.00 – Concluding remarks

13.00 – End of the Conference