

DNA Replication Gaps, Cancer and Disease

April 27-30, 2025

This conference will delve into the captivating biology of DNA replication stress and single-stranded DNA (ssDNA) replication gaps as it relates to cancer development, progression and treatment.



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Daejeon Convention Center | Daejeon, South Korea

Scientific Organizers:

Sharon B. Cantor, PhD: University of Massachusetts Chan Medical School

Alberto Ciccia, PhD: Columbia University

Vincenzo Costanzo, MD, PhD: IFOM, University of Milan

Kyungjae Myung, PhD: Institute for Basic Science and UNIST



This conference will delve into the captivating biology of DNA replication stress and single-stranded DNA (ssDNA) replication gaps as it relates to cancer development, progression and treatment. We will cover exciting new discoveries and reveal mechanistic underpinnings with implications for treatment, such as:

- Identification of gaps as key lesions sensitizing cancer cells to chemotherapy.
- Discovery that gap filling mechanisms can enable the acquisition of chemotherapy resistance and lead to widespread mutagenesis propelling cancer genome evolution.

The implications of these discoveries are profound, as they compel us to reevaluate the design of cancer therapies while also unveiling new possibilities for biomarkers of chemotherapy response and targets for more effective cancer cell elimination.

By exploring the links between gap repair, tumor mutation burden, and immune checkpoint inhibitors, this meeting aims to enhance our understanding of how these pathways can be harnessed to stimulate natural immunity and improve cancer treatment outcomes. Leveraging an interdisciplinary approach combining state-of-the-art super-resolution imaging, sophisticated genetics, and mechanistic analysis, we aim to shed light on the hidden pathways that govern gap metabolism and exploit their potential for innovative anti-cancer therapies.

The meeting will feature field leaders in fundamental mechanisms driving gap formation, regulation, and their impacts on replication stress and cancer, as well as pharmaceutical researchers interested in re-examining their anti-cancer drugs in these contexts, to drive collaborations that will advance scientific and translational impacts in the field.

Session Topics:

- DNA Replication Gaps: Causes and Consequences
- Roundtable Discussion 1: Gender and Diversity Issues in Biomedical Research
- Gaps, Cell Death and Immune Responses
- Visualizing and Defining the Gap Architecture
- Gap Suppression and Avoidance Pathways in Cancer
- Gaps, R-Loops and Replication Stress
- Roundtable Discussion 2: Nontraditional Careers: Industry, Editorial, Open Access Publishing
- Drugs Modulating and Capitalizing on a Cancer Gap Vulnerability



KEYNOTE SPEAKER

Helle Ulrich

CONFIRMED
SPEAKERS

Jill Bargonetti

Dana Branzei

Keith Caldecott

Sharon Cantor

Aura Carreira

Alberto Ciccia

Karlene Cimprich

Vincenzo Costanzo

Alan D'Andrea

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Orlando Schärer

Katharina Schlacher

Maria Spies

Nitika Taneja

Alessandro Vindigni

ABSTRACT /
SCHOLARSHIP
DEADLINE

January 28, 2025

EARLY
REGISTRATION
DEADLINE

March 11, 2025

