



Scientific program

Radiation effects on the immune system: an updated state of the art and future research needs

Budapest, Hungary

7-9 March, 2017

Tuesday, March 7

15.00 **Registration**

Welcome address and introduction

16:00 – 16:10 Géza Sáfrány, host of the workshop

16:10 – 16:20 Tamás Pándics, director general NPHC

16:20 – 16:35 Serge Candéias – an introduction to the workshop

Keynote lecture

Chair: Géza Sáfrány

16:35 – 17:20 Edit Buzás (Semmelweis University, Budapest, Hungary)

Extracellular vesicles in biomedicine

Radiation research within the EU – research strategies and priorities

Chair:

17:20 – 17:40 Jean René Jourdain (IRSN, Fontenay-aux-Roses, France)

Open Project for the European Radiation Research Area (OPERRA)

17:40 – 17:55 Annemarie Schmitt-Hannig (Federal Office for Radiation Protection,
Oberschleissheim, Germany)

*CONCERT - European Joint Programme for the Integration of Radiation
Protection Research*

17:55 – 18:10 Sisko Salomaa (University of Eastern Finland, Kuopio, Finland)

18:10 – 18:25 Nathalie Impens (SCK-CEN, Mol, Belgium)

*Ionising radiation as one of the many triggers for the immune system: (1)
finding an important needle in the growing haystack of immune responses. (2)
link to MELODI SRA and CONCERT Roadmap*

19.00 – 21.30 **Welcome reception**

Wednesday, March 8

Low dose radiation effects

Chair:

- 8:30 – 8:50 Rafi Benotmane (SCK-CEN, Mol, Belgium)
Cognitive and Cerebrovascular Effects Induced by Low Dose Ionizing Radiation 'CEREBRAD': Radiation-related inflammatory/immune response in the central nervous system.
- 8:50 – 9:10 Soile Tapio (Helmholtz Centre Munich, Germany)
Ionizing radiation leads to senescence and inflammation in human coronary artery endothelial cell line
- 9:10 – 9:30 Claudia Fournier (GSI Helmholtz Centre, Darmstadt, Germany)
Immune modulatory effects elicited by exposure to low doses of photons and α -particles
- 9:30 – 9:45 Katalin Lumniczky (National Public Health Centre-National Research Directorate for Radiobiology and Radiohygiene, Budapest, Hungary)
The role of extracellular vesicles in mediating radiation induced systemic bystander effects
- 9:45 – 10:00 Cristoforo Simonetto (Helmholtz Centre Munich, Germany)
A Mechanistic Model for Atherosclerosis and its Application to Stroke in Mayak Workers
- 10:00 – 10:15 Balázs Madas (MTA Centre for Energy Research, Budapest, Hungary)
Hyperplasia induced by radon exposure as a radioadaptive response

10:15 – 10:40 Coffee break

Biomarkers of radiation exposure and effect

Chair:

- 10:40 – 11:00 Udo Gaipl (Erlangen Clinical University, Germany)
Immunomodulation by ionizing radiation – impact for design of radio-immunotherapies and for definition of immune biomarkers of radiation exposure
- 11:00 – 11:20 Franz Rödel (Goethe University, Frankfurt-am-Main, Germany)
Human papilloma virus load and PD-1/PD-L1, CD8 and FOXP3 in patients with anal carcinoma treated with chemoradiotherapy: Rationale for immunotherapy
- 11:20 – 11:40 Enikő Noémi Bogdándi (National Public Health Centre-National Research Directorate for Radiobiology and Radiohygiene, Budapest, Hungary)

Radio- and radiochemotherapy induced phenotypical changes in peripheral blood mononuclear cells of colorectal and head and neck cancer patients

Immune mediated processes in the development of ionizing radiation-induced side effects

Chair:

11:40 – 12:10 Piotr Widlak (Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice, Poland)

Inflammation related to acute radiation toxicity appears the major factor affecting molecular changes observed in blood of cancer patients treated with radiotherapy

12:10 – 12:30 Gabriele Babini (University of Pavia, Italy)

Crosstalk between radio-resistant colorectal adenocarcinoma Caco-2 cells and the immune system

12:30 – 13:45 Lunch

13:45 – 14:05 Verena Jendrossek (University Hospital Essen, Germany)

Loss of CD73 prevents accumulation of alternatively activated macrophages and the formation of pre-fibrotic macrophage clusters in irradiated lungs

14:05 – 14:20 Florian Wirsdörfer (University Hospital Essen, Germany)

Radiation-induced lung fibrosis: molecular mechanisms and potential targets

14:20 – 14:35 Mathieu Noëlle (IRSN, Fontenay-aux Roses, France)

Bowel Radiation Injury: Complexity of the pathophysiology and promises of cell and tissue engineering

14:35 – 14:50 Hargita Hegyesi (National Public Health Centre-National Research Directorate for Radiobiology and Radiohygiene, Budapest, Hungary)

Effect of local cranial irradiation on macrophage activation in ApoE KO mice

Radiotherapy and immunotherapy –strategies for optimal combination

Chair:

14:50 – 15:20 Sandra Demaria (Weill Cornell Medicine, New York, USA)

Molecular mechanisms of radiotherapy's synergy with immunotherapy

15:20 – 15:40 Benjamin Frey (Erlangen Clinical University, Germany)

Combination of ionizing radiation with an autologous whole tumour cell based vaccine generated by high hydrostatic pressure technology

15:40 - 16:05 Coffee break

16:05 – 16:25 Yona Keisari (Sackler Faculty of Exact Sciences, Tel-Aviv University)
Eradication of experimental metastatic tumors by alpha radiation based brachytherapy in combination with immunotherapy

16:25 – 16:45 Marek Janiak (Military Institute of Hygiene and Epidemiology, Warsaw, Poland)
Cancer immunotherapy by whole-body exposures to low doses of ionizing radiation

Presentations given by the winners of the young scientist award

Chair:

16:45 – 16:55 Katarzyna Kulcenty (Greater Poland Cancer Centre, Poznań, Poland)
Effects of surgical wound fluids after intraoperative radiotherapy on breast cancer stem cells phenotype

16:55 – 17:05 Joanna Tobiasz (Silesian University of Technology, Gliwice, Poland)
Does Copy Number Variation differ between radiosensitive and regular response patients? Preliminary results

17:05 – 17:15 Lourdes Cruz-Garcia (Public Health England Chilton, UK)
Inflammation-associated genes as potential biomarkers of radiation exposure

17:15 – 17:25 Alina V. Meyer (University Hospital Essen, Germany)
Impact of the Purinergic Signaling on Normal Tissue Toxicity and Tumor Cell Sensitivity in response to Ionizing Radiation

17:25 – 17:35 Ewelina Augustynyak (Greater Poland Cancer Centre, Poznań, Poland)
The response of chondrocyte-like cells generated from human induced pluripotent stem cells (hiPSCs) to ionizing radiation treatment

17:35 – 17:45 Maria Koshanskaya (Medical University of Vienna, Austria)
Modification of radiation-induced oral mucositis by heparin – preclinical studies

17:45 – 18:25 Poster session

19:00 - 22:00 Workshop dinner

Thursday, March 9

Ionizing radiation induced effects on the immune system: basic mechanisms and pathways

Chair:

8:45 – 9:15 George Garinis (Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology-Hellas, Heraklion, Greece)
Dissecting the functional role of Genome Maintenance in DNA damage-driven Inflammation

9:15 – 9:45 Andrew Jackson (University of Nottingham, United Kingdom)
The response of Dendritic Cells and Macrophages to Ionising Radiation

9:45 – 10:05 Serge Candéias (CEA, Grenoble, France)
Low dose radiation exposure induces ageing-like effects on the murine peripheral T cell receptor repertoire

10:05 – 10:25 Géraldine Genard (University of Namur, Belgium)
Responses of Tumor Associated Macrophages to Protontherapy

10:25 – 10:45 Alexandros Georgakilas (National Technical University of Athens, Greece)
An integrative experimental and bioinformatics analysis on the association between ionizing radiation, DNA damage and immune response

10:45 – 11:10 Coffee break

11:10 – 11:40 Jean-Luc Perfettini (Institute Gustave Roussy, Villejuif, France)
Identification of a novel signaling pathway involved in IR-elicited macrophage reprogramming

11:40 – 12:00 Christine Hellweg (German Aerospace Centre, Köln, Germany)
Role of nuclear factor κ b (NF- κ B) in the cellular response to heavy ions exposure

12:00 – 12:20 Céline Loinard (IRSN, Fontenay-aux Roses, France)
Monocytes/macrophages mobilization orchestrate neovascularization after localized colorectal irradiation

Summary and closing of the workshop

12:30 – 14:00 Lunch