

Radiation Immunobiology at UKER: Impact of radiation on the immune system



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DFG Programm
Sonderforschungsbereich

Deutscher Sonderforschungsbereich für
Immunologie, Infektionskrankheiten und Tumorerkrankungen



CLUSTER
BIOTECHNOLOGIE



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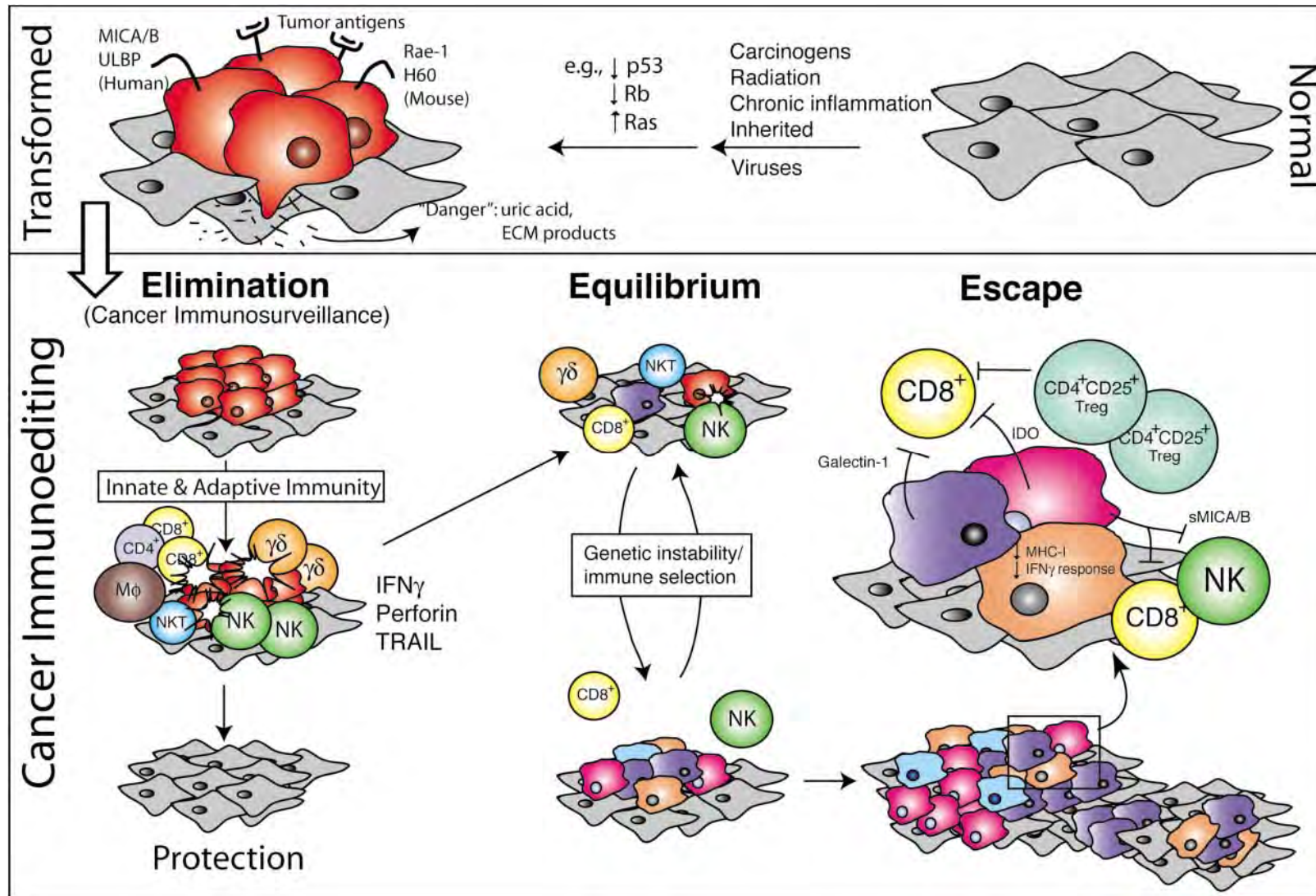


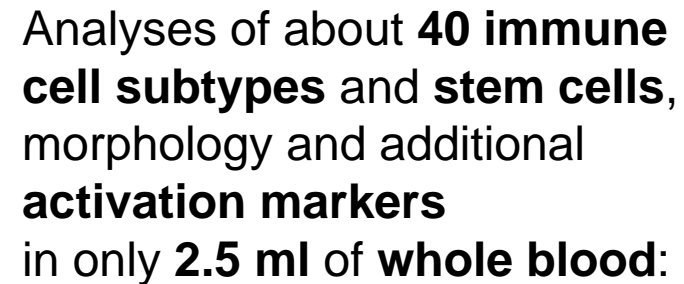
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CONCERT Infoday, Munich, 27.01.2016



Research based on immune editing concept of tumors

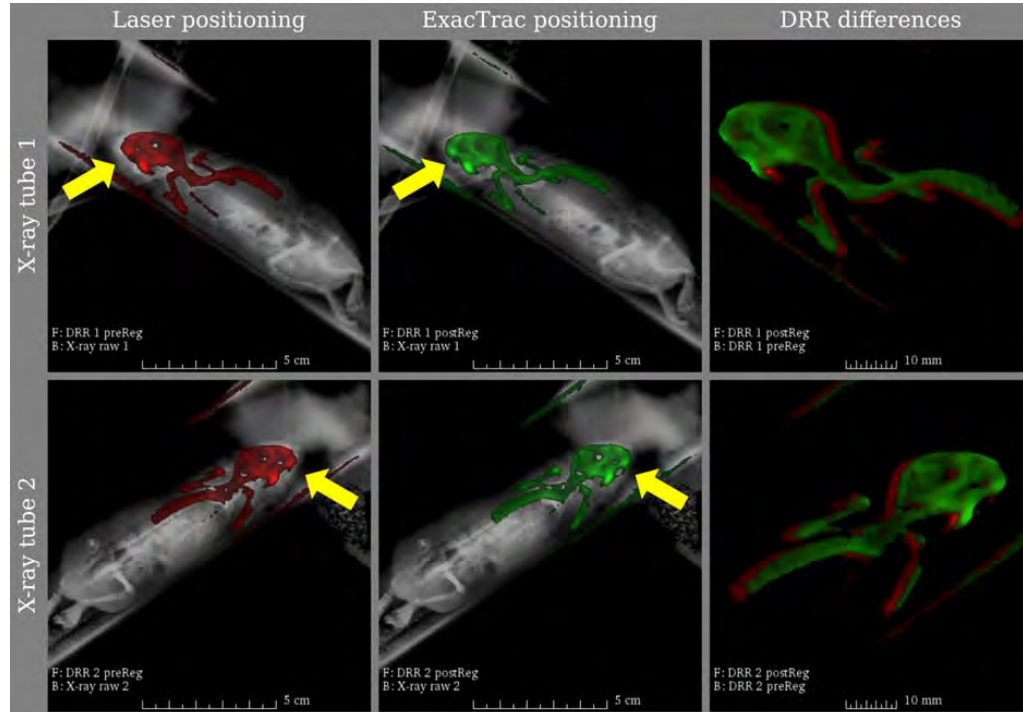
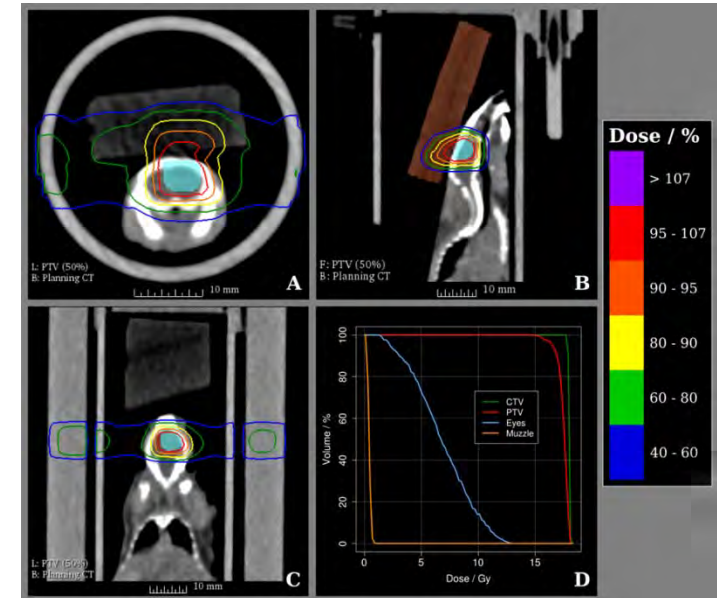




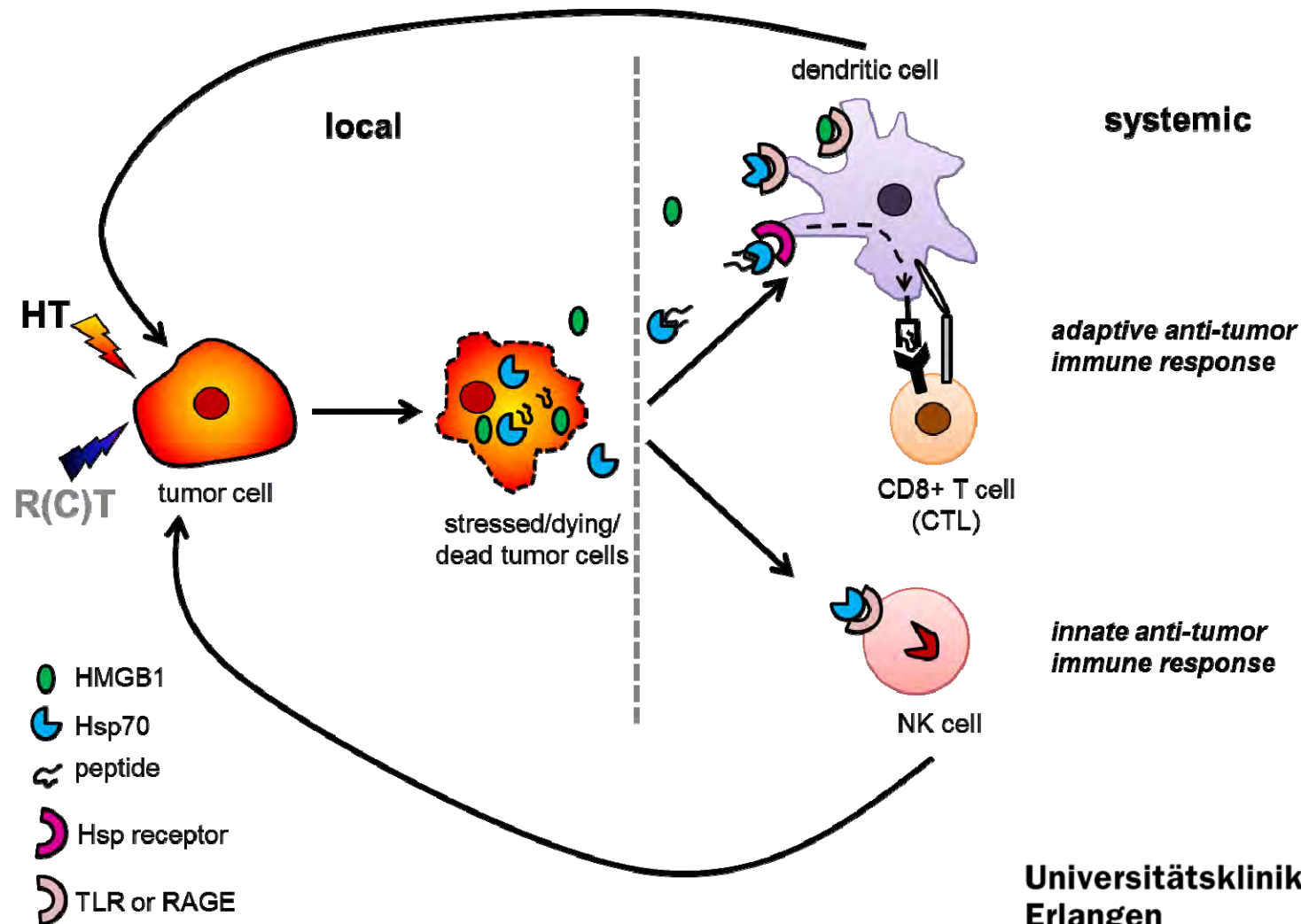
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Availability of small animal radiation procedures – inclusion of the ExacTrac system



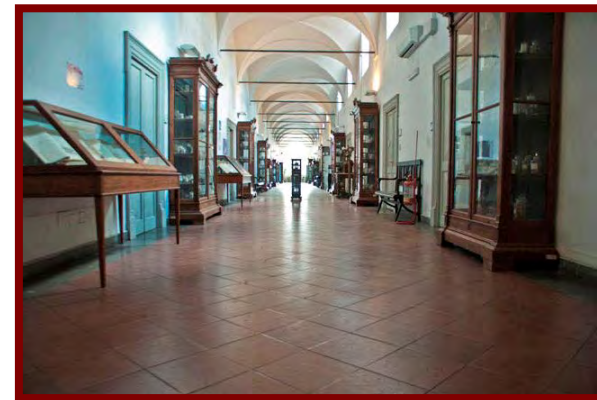
Functional *ex vivo* assays with cells exposed to stressors such as radiation and immune cells



Second University of Napoli

Department of Experimental Medicine

Umberto Galderisi

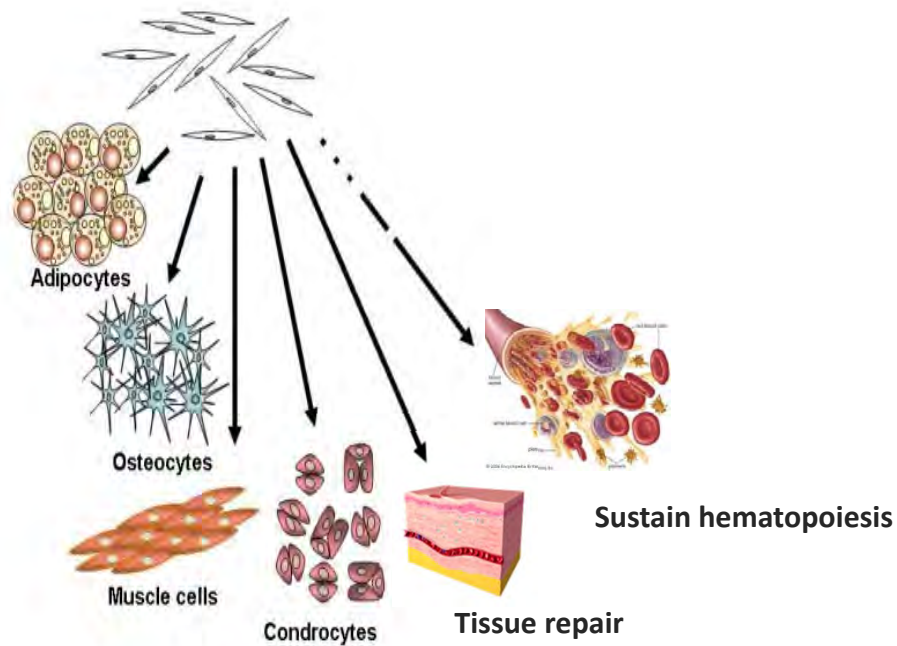


The Department of Experimental Medicine includes preclinical and clinical disciplines, all perfectly integrated and culturally joined.

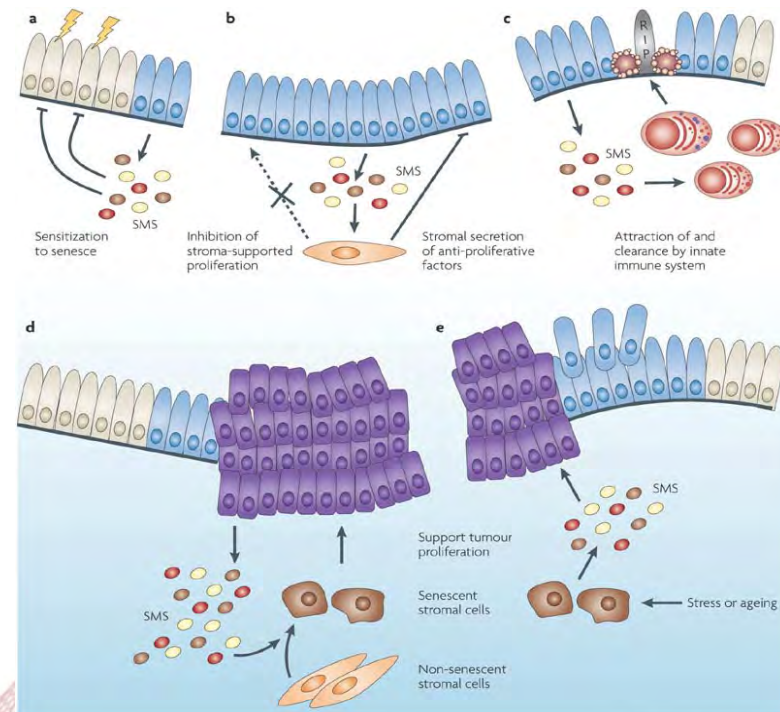
The Department is organized into different divisions that represent a solid base for a link among different disciplines in the conduction of research programs.

BONE MARROW

Mesenchymal stem cells (MSCs)



SASP: Senescence Associated Secreted Phenotype



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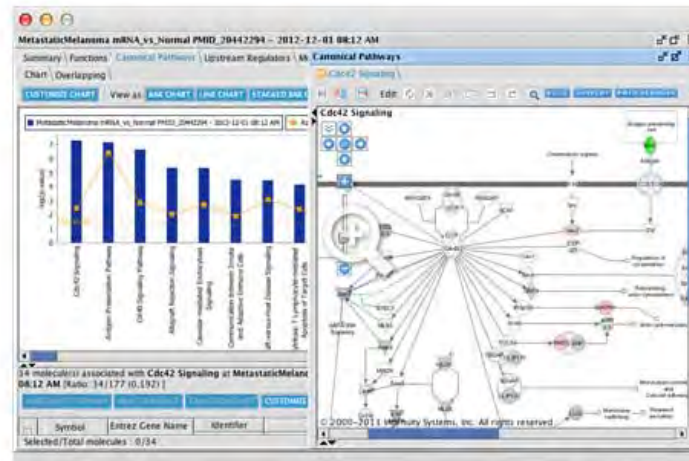
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Pathway Analysis, Canonical Pathways, Overlapping Pathways, Pathway Import and scoring. Determine most significantly affected pathways.



Take home message:

Effects of low dose radiation on MSC

- Impairment of biological functions: autophagy, proteasome activity, senescence
- **Alterations of secretome composition (I): depletion of growth factors and immunomodulators**
- Alterations of secretome composition (II): release of factors involved in protein synthesis and eso/endocytosis
- **Alterations of secretome composition (III): release of pro-senescent/stress factors**

Evaluation of IGFBs proteins in sera of patients before and 24 h after CT scan



Eligibility

18 – 65 years (both genders)

Exclusion criteria

Diabetes

Nephropathy

Cardiovascular pathology

Neoplasia

Abdominal CT scan

Thorax CT scan

Pelvic CT scan

SIEMENS ASTEION instrument

Iomeron 400 X-ray contrast solution