11.07.2017, Prof Dr. Claudia Fournier

“Risk versus potential benefit of exposure to low photon doses and α-particles emitted by radon”

In brief, Professor Claudia’s research interest includes investigation of cell cycle-mediated DNA damage response, and underlying molecular and cytogenetic mechanisms of premature differentiation, senescence and genetic instability following exposure to different radiation qualities, such as, heavy ions.
Significant experiments have been performed in a panel of human cell lines including normal adult cell like fibroblasts and hematopoietic cells as well as human hematopoietic stem cells and progenitor cells.

Notably, one of her ongoing research focuses is to investigate the functional link between long-term radiation effects and subsequent immune response, osteo-immunology and inflammation, and the relevant intercellular signalling pathways. In terms of inflammation and immune response, her research group pays particular attention on the balance between inflammatory and anti-inflammatory response following exposure to densely (heavy ions and a-particles) vs. sparsely (X-rays) ionizing radiation.

Consistent with this, her research team further elucidates different aspects of radiation response of human hematopoietic and mesenchymal stem cells and their progeny at subsequent differentiation stages in inflammatory related processes. Research activities include the combination of high doses and drugs (tumour-therapy) and the specific effects of low doses of photons and densely ionizing radiation (therapy of chronic inflammatory diseases). In this context, co-culture of different cell types, tissue equivalents and tissue samples of patients and irradiated animals are used.

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