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# Oncology

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## Oncology

### Experimental oncology

covers mechanisms of regulations of basic cell biological programs connected with oncogenesis (Cancer microenvironment, apoptosis, proliferation, differentiation, adhesion, migration, invasion and epithelial-mesenchymal transition, immunosurveillance).

### Oncohaematology

molecular regulatory mechanisms of blood cell differentiation and their pathologies. Basic, applied and translational research in the field. Namely childhood leukemias, morbus Hodgkin and haematopoietic diseases.

### Solid tumors

namely neurooncology, oncogynaecology, oncurology, pancreatic and skin cancers. Individualization of radical surgical treatment, ultrasound implementation into the gynecological oncology, hereditary syndroms and epigenetic alterations in prediction and early detection of cancer. Optimization of diagnostic and therapeutic processes, establishment of complex biobank. Studies of in vivo homing of transplanted cells, tumor immunology, monitoring of the response to treatment in multiple myeloma, extracorporeal photopheresis. Characteristics of the mechanisms of the effectiveness of anticancer agents, detection of circulating cancer cells, advanced techniques of radiotherapy.

### Selected outputs

- MYB transcriptionally regulates the miR-155 host gene in chronic lymphocytic leukemia. Vargova K, Curik N, Burda P, Basova P, Kulvait V, Pospisil V, Savvulidi F, Kokavec J, Necas E, Berkova A, Obrtlíková P, Karban J, Mraz M, Pospisilova S, Mayer J, Trneny M, Zavadil J, Stopka T. *Blood*, (2011)117(14):3816-25. IF: 9.898
- Aggressive acute myeloid leukemia in PU.1/p53 double-mutant mice. Basova P, Pospisil V, Savvulidi F, Burda P, Vargova K, Stanek L, Dluhosova M, Kuzmova E, Jonasova A, Steidl U, Laslo P, Stopka T. *Oncogene*, (2014) 33(39):4735-45. IF: 8.56
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