

1st Workshop on Experimental Tumour Biology

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Organised by

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Application of modern experimental methods in cancer biology generates new knowledge to understand the mechanisms of development and progression of malignant disease. With the rapid development of molecular biology, new tools are becoming available to study tumour progression – from carcinogenesis to tumour cell invasion and metastasis. The aim of the 1st Workshop in Experimental Tumour Biology was to select some topics, covered by the scientists from some research laboratories in Slovenia, working in the field of tumour biology and by their collaborators from abroad. It has become essential, especially in a small scientific community, such as Slovenia, that the researches in related areas are well and promptly informed with the latest data of their work. The exchange of information in this field is especially important for young investigators, starting their careers, and this Workshop is giving them the opportunity to get a new knowledge and to discuss the research and experimental problems with their young colleagues and senior researches. The workshop was divided into four major sections. Carcinogenesis starts from the initial DNA damage, which is caused by external agents, present in food and beverages, by radiation and other environmental pollutants. To study their effects at molecular level, several new tests were introduced in vitro at cellular level and in vivo in animal models. This is covered in the first section on Detection of genetic alterations in cancer, where mutagenicity assays, including the newly developed Comet assays, and the tumorigenicity assays in animal models were applied to test the effects of heavy metals and bacterial toxins, possibly present in drinking water.

Next, in vitro and in vivo studies of tumour progression were discussed, where recent data on breast and brain tumour cells invasion were presented. Diagnosis of malignant progression and prognosis of the disease are clearly related and can be improved by detecting new biological markers of malignancy, such as proteolytical enzymes, especially cathepsins and their endogenous inhibitors. This was covered in the section of Immunoassays in cancer biology.

The growth of malignant tumours is associated with angiogenesis, new vessels formation, induced by the tumour cells, and understanding of the process is essential for prognosis as well as for the development of new therapeutic anti-angiogenesis agents, as discussed the in last section on Tumour angiogenesis.

We strongly believe that the success of the first workshop will lead to next meetings of this kind and we hope that they will become traditional in the future.