

## Research project IZSve 06/14

**Exploring the prognostic potential of circulating tumour cells in canine metastatic mammary tumors: a pilot study for developing an effective spontaneous animal model for human breast cancer**

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The diagnostics and treatment of tumours in the dog is undoubtedly as difficult problem as in human. The occurrence of neoplastic disease in animals being often regarded as the members of the family imposes a big demand on the development of effective diagnostic methods and therapeutic strategies. On the other hand, dogs represent a natural model for human tumours, since many types of tumours in dogs have similar epidemiology, histopathological and molecular features, as well as biological behavior similar to the human counterpart.

Human oncology offers a variety of modern methods of detection and treatment of neoplasms, including cancers. For several years the extensive research carried out on the mechanisms of metastases formation concentrated on circulating tumour cells (CTCs). The modern understanding of cancer biology and process of metastasis suggest that these circulating cells play a vital role in forming metastatic disease.

The aim of this project is to investigate the role of CTCs in predicting progression-free interval and survival in dogs with metastatic mammary tumours (MTs), by CTCs enumeration in bloodstream before and after chemotherapy.