

Research title

Immune response in canine cancer

Risposta immunitaria nei tumori canini

Tutor

Prof Stefano Comazzi

Contact details

Università degli Studi di Milano

Dipartimento di Medicina Veterinaria

E-mail: Stefano.comazzi@unimi.it

ORCID 0000-0002-1567-8055

<http://www.dimevet.unimi.it/ecm/home>

State of the art and aims of the project

Host immune response plays a determinant role in the onset of cancer, response to therapy and outcome in humans and animals. T regulatory (Tregs) lymphocytes and myeloid-derived suppressor cells may decrease T cytotoxic response against the tumor, thus facilitating expansion and dissemination. Similarly, Programmed Cell Death Protein 1 (PD-1) and its ligand (PDL-1), may promote T cytotoxic lymphocytes and prolong Tregs survival. PD1 and PDL-1 may be expressed by immune cells and by many neoplastic cells. Specific inhibitors of PD-1 and PDL-1 have been developed in human medicine but they are not yet available in veterinary medicine.

The aim of the present project is to investigate the immune response in some canine tumors (lymphoma, chronic lymphocytic leukemia, mast cell tumors, melanoma) via flow cytometry, molecular biology, and ELISA techniques, in order to clarify pathogenesis and developing some biomarkers useful to predict prognosis and response to traditional chemotherapy or specific immunotherapy.

Recent publications of the tutor in the field

1. Aresu L, Ferraresso S, Marconato L, Cascione L, Napoli S, Gaudio E, Kwee I, Tarantelli C, Testa A, Maniaci C, Ciulli A, Hillmann P, Bohnacker T, Wymann MP, Comazzi S, Milan M, Riondato F, Dalla Rovere G, Giantin M, Giannuzzi D, Bertoni F (2018). NEW MOLECULAR AND THERAPEUTIC INSIGHTS INTO CANINE DIFFUSE LARGE B CELL LYMPHOMA ELUCIDATES THE ROLE OF THE DOG AS A MODEL FOR HUMAN DISEASE. *Haematologica*. pii: haematol.2018.207027. doi: 10.3324/haematol.2018.207027
2. Beccati M, Martini V, Comazzi S, Fanton N, Cornegiani L. (2016) LYMPHOCYTE SUBPOPULATIONS AND TREG CELLS IN DOGS WITH ATOPIC DERMATITIS RECEIVING CICLOSPORIN THERAPY: A PROSPECTIVE STUDY *Veterinary Dermatology*. 27(1):17-e5
3. Marconato L, Stefanello D, Sabattini S, Comazzi S, Riondato F, Laganga P, Frayssinet P, Pizzoni S, Rouquet N, Aresu L. (2015) ENHANCED THERAPEUTIC EFFECT OF APAVAC IMMUNOTHERAPY IN COMBINATION WITH DOSE-INTENSE CHEMOTHERAPY IN DOGS WITH ADVANCED INDOLENT B-CELL LYMPHOMA. *Vaccine*. 33(39):5080-5086
4. Marconato L, Martini V, Stefanello D, Moretti P, Ferrari R, Comazzi S, Laganga P, Riondato F, Aresu L. (2015) PERIPHERAL BLOOD LYMPHOCYTE/MONOCYTE RATIO AS A USEFUL PROGNOSTIC FACTOR IN DOGS WITH DIFFUSE LARGE B-CELL LYMPHOMA RECEIVING CHEMOIMMUNOTHERAPY. *The Veterinary Journal*, 206(2):226-30.
5. Marconato L, Frayssinet P, Rouquet N, Comazzi S, Leone VF, Laganga P, Rossi F, Vignoli M, Pezzoli L, Aresu L. (2014) RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLINDED CHEMO-IMMUNOTHERAPY CLINICAL TRIAL IN A PET DOG MODEL OF DIFFUSE LARGE B-CELL LYMPHOMA. *Clinical Cancer Research*, 1;20(3):668-677