



## RESEARCH TOPIC MECM7

### Targeting immunosuppressive neutrophil subsets in cancer MECM standard

#### Research Area

Immunology

#### Laboratory name

Innate immunity in inflammation and cancer

#### Research Supervisor

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#### Abstract

Immunotherapy represents one of the most promising therapeutic approaches for cancer patients. However, a significant portion of patients treated with immune checkpoint inhibitors fail to respond to the treatment. Neutrophils are the most abundant circulating leukocytes in humans and represent an important component of the tumor microenvironment. However, their role in tumors remains controversial. We recently showed that neutrophil-deficient mice are more susceptible to sarcomas and colitis-associated colorectal cancer, revealing their protective potential. Our recent results highlight neutrophil heterogeneity within tumors and identifies subsets with immunosuppressive activity. Using a comprehensive approach, including genetically modified mice, in vivo treatment with blocking antibodies or small molecules, and in vitro analyses, we aim to develop therapies targeting immunosuppressive neutrophils. We will collaborate with clinicians to validate our results using patient samples.

#### Main technical approaches

Animal handling (mouse cancer models), In vivo treatment, cellular biology (purification and culture of cells), multiparametric flow cytometry, fluorescent imaging microscopy, molecular biology (PCR, Real-time PCR, sequencing), bioinformatics analysis.

#### Scientific references

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### **Type of contract**

PhD scholarship of € 21.000 gross per year awarded by Humanitas University. This sum is exempt from IRPEF income tax according to the provisions of art. 4 of Law no. 476 of 13th August 1984, and is subject to social security contributions according to the provisions of art. 2, section 26 and subsequent sections, of Law no. 335 of 8th August 1995 and subsequent modifications.



Borsa di dottorato pari a € 21.000 annui lordi erogata da Humanitas University. Importo non soggetto a tassazione IRPEF a norma dell'art. 4 della L. 13 agosto 1984 n. 476 e soggetto, in materia previdenziale, alle norme di cui all'art. 2, commi 26 e segg., della L. 8 agosto 1995, n. 335 e successive modificazioni.