



## RESEARCH TOPIC MEM18

# Role and predictive potential of distinct circulating and tumor-associated neutrophil subsets in progression and therapeutic response of malignant gliomas

## Curriculum MEM Standard

### Laboratory name:

Lab of chemokine biology

### Pre-clinical Supervisor:

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### Abstract

High grade gliomas (HGG) are highly aggressive tumors with a dismal prognosis despite our aggressive multimodality treatment approach. Great expectations are presently on immunotherapy but a better understanding of immunosuppressive mechanisms operating in different HGG variants is needed. Preliminary data identify distinct subsets of HGG-associated neutrophils, and we propose to functionally characterize these tumor-associated and circulating distinct neutrophil subsets in distinct HGG variants. A prospective cohort will also validate the ability of immune biomarkers to identify patients with greater risk of early recurrence and guide patient selection for immunotherapies targeting the myeloid lineage

### Main technical approaches

Advanced immunophenotypic and transcriptomic technologies

### Scientific references

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2. Massara M., Persico P, Bonavita O, Mollica Poeta V, Locati M, Simonelli M, Bonecchi R. Neutrophils in Gliomas *Front Immunol.* 2017 Oct 26;8:1349.
3. Jaillon S, Ponzetta A, Di Mitri D, Santoni A, Bonecchi R, Mantovani A. Neutrophil diversity and plasticity in tumour progression and therapy. *Nat Rev Cancer.* 2020 Sep;20(9):485-503.
4. Mollica Poeta V, Massara M, Capucetti A, Bonecchi R. Chemokines and Chemokine Receptors: New Targets for Cancer Immunotherapy. *Front Immunol.* 2019 Mar 6;10:379.



5. Locati M, Mantovani A, Bonecchi R. Atypical matters in myeloid differentiation. *Nat Immunol.* 2017 Jun 20;18(7):711-712.

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