



MEDICAL ONCOLOGY

Project title

“Prospective and comprehensive analysis of circulating and infiltrating leukocyte subsets in patients with diffuse malignant gliomas”

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Laboratory name: Medical Oncology

Abstract

We will perform a comprehensive and prospective analysis of phenotypes, functional properties and underlying molecular mechanisms of infiltrating and circulating leukocyte subsets in malignant glioma patients through a collection of fresh tumor tissue and peripheral blood samples. Objectives of this study are to characterize and compare the immunological profile of different histo-molecular subtypes of malignant glioma, to explore the dynamic and functional changes of each circulating leukocyte subset during and after anticancer therapies, to correlate the immunological profile of different histo-molecular subtypes of malignant glioma to antitumor response and survival.

We aim to study immunological-based mechanisms of resistance and escape to treatments, discover new specific immunological targets potentially “druggable” with immunotherapeutic interventions, and identify reliable immunological prognostic and predictive biomarkers that could guide patient selection for immunotherapies.

Main technical approaches

Circulating and infiltrating leukocyte subsets will be studied by fluorescence activated cell sorting (FACS), evaluated and monitored by multiparametric flow cytometry, proteomic/transcriptomic assays, single-cell RNA sequencing, immunohistochemistry/immunofluorescence analysis at different time-points and results will be correlated with clinical and instrumental datasets.

Scientific references

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Mohme M, Schliffke S, Maire CL. Immunophenotyping of newly diagnosed and recurrent glioblastoma defines distinct immune exhaustion profiles in peripheral and tumor-infiltrating lymphocytes. *Clin Cancer Res* 2018;24:4187–200.

Zhao J, Chen AX, Gartrell RD, et al. Immune and genomic correlates of response to anti-PD-1 immunotherapy in glioblastoma. *Nat Med*. 2019 Mar;25(3):462-469.



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