



Salvador Martinez

Miguel Hernandez University
Spain

Induced immunosuppression by brain pericytes helps in glioma genesis and progression

Abstract:

Direct interaction between perivascular cells, termed pericytes (PC), and glioblastoma multi-forme (GBM) cells is essential for inducing changes in the pericytes' antitumoral and immune phenotype. Starting from the early stages of carcinogenesis in GBM, GBM-conditioned PC (GBM-PC) undergo proliferation, acquiring a protumoral and immunosuppressive phenotype. They secrete elevated levels of antiinflammatory cytokines, express immunosuppressive molecules, and substantially impair the activation capacity of immunocompetent T cells, thereby promoting tumor growth. Blocking the conditioning mechanisms of PC in the GBM tumor microenvironment (TME) results in tumor eradication due to immunological activation. This indicates that PC are a pivotal cell type within the TME responsible for the tumor-induced immunosuppression facilitating GBM cells' evasion of the immune system. Other cells within the TME, such as tumor-associated macrophages (TAM) and microglia, have also been identified as contributing to this immunomodulation. However, the cellular heterogeneity of immunocompetent cells within the TME can lead to misinterpretation of different stages of PC cellular responses as TAM. Hence, novel therapies can be formulated to disrupt GBM-PC interactions and/or PC conditioning.

Biography

Salvador Martinez (MD, PhD and Professor of Anatomy) is analyzing the role of pericytes (perivascular cells) in the control of the immune response against glioblastoma multiforme. This study is describing the cellular and molecular mechanisms underlying the immune tolerance of this type of cancer (Valdor et al., *Oncotarget*, 2017, *PNAS*, 2019; Molina et al., *Cancers* 2019, *Front Cel Biol* 2022; Pombero et al., 2023), demonstrating the cellular mechanisms underlying tumor immunosuppression.