“IDO1, Immunotolerance and Immunotherapy of Glioblastoma"

Glioblastoma (GBM) is the most common and aggressive form of brain tumor in adults. Median survival for GBM patients is 14.6 months post-diagnosis. A common feature of GBM is the intratumoral presence of immunosuppressive regulatory T cells (Treg; CD4+CD25+FoxP3+) that impair a patient’s anti-GBM immune response. The identification of molecular factors that contribute to Treg accumulation in brain tumors is therefore an important area of investigation for increasing the effectiveness of therapies, and especially immunotherapies, for treating GBM.

My laboratory studies indoleamine 2,3 dioxygenase 1 (IDO1), an enzyme that converts tryptophan (Trp) to kynurenine (Kyn). Utilizing an orthotopic, syngeneic and immunocompetent engraftment model (GL261-C57BL6), I previously demonstrated that shRNA-mediated suppression of IDO1 in murine GBM cells significantly decreases intratumoral Treg accumulation coincident with a cytolytic T cell response facilitating complete tumor rejection. In contrast, pharmacologically-targeting IDO1 did not induce spontaneous tumor rejection but rather, revealed previously unappreciated modes of immunosuppressive function. With respect to IDO1 in GBM, we now aim to investigate: 1) previously uncharacterized mechanisms of action, 2) the relevance of murine observations to human glioblastoma and 3) immunotherapeutic targeting.

Join Us

Department of Microbiology-Immunology Seminar

Thursday, February 11, 2016
2:00 - 3:00 p.m.
Baldwin Auditorium, Lurie Building
303 East Chicago Avenue, Chicago, Illinois

Speaker
Derek Wainwright, PhD
Assistant Professor, Department of Neurological Surgery
Northwestern University Feinberg School of Medicine
and Member of the Robert H. Lurie Comprehensive Cancer Center
Chicago, IL

Host
Laimonis Laimins, PhD
Professor and Chair, Department of Microbiology-Immunology
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