NEURO DIDEROT

Séminaires scientifiques de NeuroDiderot

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Equipe 2 NeuroDiderot

Batf3-dependent cross-priming by splenic CD169+ macrophages provides protective immunity against tumors.

I have a broad expertise and interest in fundamental, translational and clinical immunopathology, (neuro-) physiology, cell biology and metabolism, illustrated by several key publications (doi: 10.1016/j.xcrm.2021.100370; doi: 10.1016/j.smim.2023.101764; doi: 10.1038/s41467-020-15692-0; doi: 10.3389/fcell.2020.585713; doi: 10.1016/j.celrep.2018.08.041; doi: 10.1038/ni.3711; doi: 10.1016/j.isci.2024.109929; doi: 10.1016/j.jaut.2016.06.003).

During the seminar, I will present some of the large set of experimental evidence collected since 2015 shedding the light on a subset of splenic resident-tissue macrophages in providing protective immunity against tumors. These results are part of a manuscript recently pre-accepted for publication to Immunity and are summarized below. I will also present my future directions, e.g. studying how immune myeloid cells communicate with the peripheral nervous system to regulate the physiology of the spleen in health and disease.

Macrophages are phagocytic immune cells providing tissue-adapted and -imprinted homeostatic functions. Among key macrophage populations, splenic metallophilic marginal zone macrophages are positioned to sense and control dissemination of bloodborne threats. However, they have escaped thorough characterization for technical reasons. Using a novel purification protocol, we clearly defined MMMs phenotypically and identified their unique gene expression profile positioned for CD8+ T cell activation and MHC class I cross-presentation. *In vitro,* we showed that purified MMMs equal cDC1s in cross-priming antigens yet employing a distinct, vacuolar processing pathway. In vivo biphoton and *ex vivo* light-sheet imaging showed long-standing contacts with cognate T cells differentiating to effectors. Moreover, we showed that MMMs cross-prime protective CD8+ T cell antitumor responses both by capturing blood-borne tumor antigens and by internalizing tumor cells seeding the spleen. Critically, this requires Batf3 expression by MMMs but is independent of cDC1s capturing tumor material for cross-presentation or cross-dressed with MHC-I molecules presenting tumor antigens.

Jeudi 9 janvier 2025, 11h00
Salle du 6ème
et Visio conférence par ZOOM

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