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Phenotypical characterization of different cell types upon infection with *Toxoplasma gondii*

Toxoplasma gondii is an ubiquitous obligate intracellular parasite, capable of causing life-threatening neurological complications in immune-compromised individuals; disseminated congenital infections in the developing fetus and ocular pathology in otherwise healthy individuals (Joynson, et al. 2001).

Within the vertebrate host, *Toxoplasma* is capable of infecting a wide range of host cells, e.g. leukocytes, by active penetration (Sibley, 2004) and induces a state of hypermotility in infected DC and macrophages (Lambert, et al. 2011). Following oral infection, the parasite crosses epithelial and endothelial cellular barriers to enter into circulation and disseminate within the organism. Previous work reveals that active invasion of DC by *T. gondii* initiates a series of regulated events, including rapid cytoskeleton rearrangements, hypermotility and chemotaxis, that promote the migratory activation of DC *in vitro* (Weidner, et al. 2012).

The aim of this project is to explore the hypothesis that other cell types involved in the cellular immunity, such as T cells, NK cells, monocytes, macrophages, microglial cells, exhibit morphological changes and hypermotile phenotype upon infection with *T. gondii*.

For the culture and differentiation of the different cell types we will need GM-CSF and INF-γ (M1 macrophages); M-CSF and IL-4 (M2 macrophages) and to assessed the chemotactic responses of *Toxoplasma*-infected cells we will used CCL19.

Joynson, D. H., and T. J. Wreghitt. 2001. *Toxoplasmosis*: a comprehensive clinical guide. Cambridge University Press, Cambridge, UK.
Sibley, L. D. 2004. Intracellular parasite invasion strategies. Science **304:**248-253.
H. Lambert, I. Dellacasa-Lindberg, A. Barragan, *Microbes Infect* 13, 96 (Jan, 2011).
Weidner, J.M., Hernández-Castañeda, M.A., Fuks, J.M., Rethi, B., Wallin, R.P.A. and Barragan, A. Rapid cytoskeleton remodeling following invasion by *Toxoplasma gondii* modulates the migratory properties of dendritic cells. *Cell Microbe.* Submitted