

Analysis of the role of lipids in macrophage proliferation

The Sieweke lab is offering an internship to investigate the role of lipids on macrophage proliferation. The Sieweke lab has pioneered the concept that resident macrophages have stem cell like self-renewal capacity that can be activated by natural or experimental inactivation of transcription factors restricting proliferative capacity. Whereas the role of external cytokines and small molecule mediators in this process has been studied, the role of lipids is less well understood. This is in part due to the difficulty to identify physiological conditions and effective ways to investigate hydrophobic compounds in an aqueous environment. The successful candidate will therefore explore different methods of exposing lipids to macrophages in culture and measure the impact on proliferation. Different bacterial and cellular lipid compounds will be tested. The candidate will employ cell culture, cell biology and immunological techniques, such as EdU assays, growth, survival and colony forming assays, flow cytometry and gene expression analysis by qPCR.