

Joint KJELDGAARD & DANDRITE Lecture

Thursday 13 October 2022 at 13.15 - 14.00

Building 1871-120 (MBG)

Aarhus University



Prof. Dr. Marco Prinz

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The myeloid side of the brain

The diseased brain hosts a heterogeneous population of myeloid cells, including parenchymal microglia, perivascular cells, meningeal macrophages and blood-borne monocytes. To date, the different types of brain myeloid cells have been discriminated solely on the basis of their localization, morphology and surface epitope expression. However, recent data suggest that resident microglia may be functionally distinct from bone marrow- or blood-derived phagocytes, which invade the CNS under pathological conditions. During the last few years, research on brain myeloid cells has been markedly changed by the advent of new tools in imaging, genetics and immunology. These methodologies have yielded unexpected results, which challenge the traditional view of brain macrophages. On the basis of these new studies brain myeloid subtypes can be differentiated with regard to their origin, function and fate in the brain (1,2,3).

References:

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2. Jordão MJC, Sankowski R, Brendecke SM, Sagar, Locatelli G, Tai Y-H, Tay TL, Schramm E, Armbruster S, Hagemeyer N, Groß O, Mai D, Çiçek Ö, Falk T, Kerschensteinher M, Grün D, **Prinz M**: Single-cell profiling identifies myeloid cell subsets with distinct fates during neuroinflammation. *Science* 363 (6425), eaat7554 (2019).
3. Geirsdottir L, David E, Keren-Shaul H, Bohlen S, Neuber J, Weiner A, Balic A, Dutertre C, Pfeigel C, Tautz D, Peri F, Vizioli J, Matiassek K, Scheiwe C, Meckel S, Ulitsky I, Ginhoux F, Erny D, Amit I, **Prinz M**: Cross-species single-cell analysis reveals divergence of the primate microglia program. *Cell*, 179(7):1609-1622.e16 (2019).

Host: Prof. Poul Nissen, Dept. of Molecular Biology and Genetics, Director at DANDRITE - Danish Research Institute of Translational Neuroscience, Aarhus University