

FOR 1336

Studying Molecular Aspects and Contributions of Microglia in Brain Context



**Funding Period:
from 2010 to 2017**

Project Leader

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Project Description:

Microglia are resident brain macrophages that seed the CNS before birth and subsequently maintain themselves behind the blood brain barrier through longevity and limited self-renewal. Given their seclusion, the study of microglia in their physiological context has long been compromised by the absence of suitable experimental systems. We recently developed a novel inducible Cre recombinase-based approach that allows us to specifically genetically manipulate microglia in otherwise intact animals. Here we propose to use the respective CX3CR1CreER mice to investigate the role of microglia-derived membrane-bound and shed TNF α to the maintenance of brain homeostasis, as well as the development of autoimmune inflammation and de- and remyelination. In a second line of experiments we aim to perform a detailed characterization of the phenotypic changes microglia undergoes in comparison to infiltrating monocyte-derived macrophages in neuroinflammation. Moreover we will combine the CX3CR1CreER transgene with a RiboTag transgene to perform a gene expression profiling of microglia in health and disease.

Reference: <https://gepris.dfg.de/gepris/projekt/165217260>