

MS02-1 **Microglia instruct neurogenesis and gliogenesis in early postnatal subventricular zone**

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We here report that microglia regulate the neurogenesis and gliogenesis in early postnatal subventricular zone (SVZ). Activated microglia accumulated inside SVZ from P1 to 10, and such accumulation was no longer observed at P30. When microglial activation was suppressed during P1-4 by minocycline, the number of cells positive for KI67, Doublecortin, or O1 significantly decreased. In P4 SVZ, IL-1 β , IL-4, IL-6, IFN γ , TNF α were detected at high concentrations and minocycline decreased the concentrations of these cytokines. Minocycline inhibited the proliferation and differentiation of neurosphere cells induced by the media conditioned by activated microglia. IL-1 β alone enhanced the proliferation and differentiation, TNF α alone enhanced the differentiation of neurosphere cells. Currently we are investigating the effects of other cytokines. These results suggest that cytokines released by activated microglia affect the proliferation and differentiation of neural stem cells and neural progenitors. The elucidation of mechanisms underlying the regulation of neurogenesis and gliogenesis by activated microglia will lead to the new treatment strategy for brain damage.