

Diversity of microglial cells in the embryonic and adult brain of *Gallotia galloti* as demonstrated by tomato lectin binding.

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The aim of the present study was to analyze the morphology and distribution of microglial cells in the developing and adult telencephalic cortex of *Gallotia galloti*, a Canary Island endemic lizard. Cryostat, paraffin and vibratome sections from brains of embryos (E31- E40) and adult (2 years old) lizards were processed for tomato lectin histochemistry, a rat microglial marker (Acarin et al.1994, J. Histochem. Cytochem., 42:1033-41). Our observations revealed that tomato lectin binding demonstrated the microglial population in both adult and embryonic lizard brains.

During development, as described in mammals, microglial cells showed changing morphologies. Three main types were described: round ameboid microglia, pseudopodic microglia and primary microglia. These cell types were first found in areas near the cerebral ventricles. In adult lizards, most of microglial cells displayed a ramified morphology, although, occasionally, some round ameboid-like cells were observed in close relationship to blood vessels.

Microglial distribution in the adult lizard was not homogeneous but showed certain layered pattern in each region: in the medial cortex microglial cells were seen in the plexiform layers adjoining to granular layer. In dorsomedial cortex they were found adjacent to ependyma and to granular strip and dispersed in plexiform layers. In the superpositio lateralis of dorsal cortex some microglial cells were found into granular layer as well as in the lateral cortex.

In conclusion, tomato lectin binding is shown as a useful tool for the demonstration of microglia in the developing and adult lizard brain. Comparing to mammals, time course of microglial differentiation in lizards is delayed and maintained during the adult life. Heterogeneous microglial distribution pattern could be a reflect of functionality of this glial cell type.

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