

## AMOEBOID AND RAMIFIED MICROGLIAL CELLS ARE PRESENT IN PRIMARY ASTROGLIAL AND NEURONAL CELL CULTURES.

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The presence of microglial cells in primary astroglial and neuronal cell cultures was examined by using specific histochemical and immunocytochemical markers. The neuronal and astroglial cell cultures were prepared from the neopallia of E14-18 and newborn mice, respectively, and grown for several days or weeks. The cultures were then fixed in buffered paraformaldehyde and processed histochemically for nucleoside diphosphatase (NDPase), a microglial marker. Some cultures were sequentially processed for glial fibrillary acidic protein (GFAP) immunoreactivity, or for histochemical demonstration of acid phosphatase (APase) activity. Our observations showed the presence of double labelled, NDPase-APase positive cells in both astroglial and neuronal cultures. APase activity was present in some neurons and astrocytes, but in no cases neurons and astrocytes displayed NDPase reactivity. Based on their morphology, localization and staining features, NDPase-APase positive cells were identified as either ramified or amoeboid microglial cells. Ramified microglial cells were distributed in between both the cultured astrocytes and the cultured neurons, and had long ramified processes. Amoeboid microglial cells were smaller and did not have ramified processes but rather pseudopodia and filopodia. In astrocyte cultures the amoeboid microglial cells were located on top of the astrocytes. In the neuronal cultures they were found in areas free of neurons. Amoeboid microglial cells in general stronger NDPase and APase enzymatic activities than ramified microglial cells.

In conclusion, our results have demonstrated the presence of amoeboid and ramified microglial cells in primary astroglial and neuronal cultures set up according to standard methods. In order to draw the right conclusions from studies of such cultures, the presence of microglia should be considered.

Supported by the Danish MRC and the Lundbeck Foundation