Studies of iectin receptors of rat microglia in culture: receptor distribution and internalization

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摘要

Abstract

The present study examined the lectin labeling of diverse morphological forms of microglia in culture. Similar to amoeboid microglial cells in vivo, polymorphic microglia showed lectin labeling at their plasma membranes, as well as in a few cytoplasmic vesicles and vacuoles. This labeling pattern was observed in cultured microglia incubated with isolectin at 4°C for 30 min. Five minutes after the temperature was raised to 37°C, the surface lectin receptors appeared to be internalized, as shown by the occurrence of many subsurface lectin-labeled vesicles, vacuoles and tubule-like structures. With longer incubation (up to 1 – 2 h at 37°C), many lysosomes and a few trans-Golgi saccules and associated lysosome-like structures became labeled. Concomitant with these changes was a reduction of lectin labeling at the plasma, with labeling having vanished in most of the cells after 1 – 2 h of incubation. By 24 h, only a few cells retained surface lectin labeling. It appears, therefore, that irrespective of morphology, lectin labeling (including its intracellular pathway) of microglia in culture parallels that of amoeboid microglia in vivo. This would offer a useful model for the study of lectin turnover in microglia and help to explain the roles of such receptors in microglial differentiation and function.