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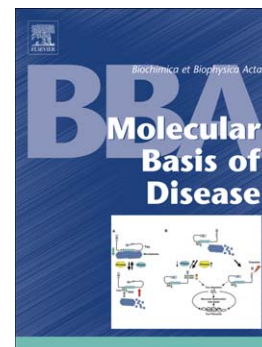
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Dual role of histamine on microglia-induced neurodegeneration

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Abstract

Several hypotheses have been raised about the dual role of histamine in neurological disorders, and evidences have shown its crucial involvement in the modulation of microglia-mediated neuroinflammation. Previously, we reported that the administration of histamine induces a deleterious effect by promoting a pro-inflammatory phenotype on microglia that ultimately compromises dopaminergic neuronal survival. Contrary, under lipopolysaccharide challenge, histamine inhibits the injurious effect of microglia-mediated inflammation, ultimately protecting dopaminergic neurons, suggesting that the modulation of microglial activity by histamine is dependent on the environmental context. Thus, histamine and/or histamine receptors agonists may serve to develop new therapeutic approaches to overcome neurodegenerative disorders.

1. Microglia-mediated neuroinflammation

Microglia are the innate immune cells of the Central Nervous System (CNS) that contribute to restore its homeostasis after detrimental challenges. In physiological state, these cells are constantly patrolling the CNS being able to rapidly detect pathogens and other harmful stimuli [1]. In the absence of detrimental stimuli microglia assume a resting (M0) phenotype. After an exo- or

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