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Poster Presentation

Matrix Metalloproteinases in Neuroinflammation

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Abstract

Matrix metalloproteinases (MMPs) are a family of neutral proteinases that are important in normal development, cellular differentiation or migration, angiogenesis, neurogenesis, wound repair, and a wide range of pathological processes such as oxidative stress and neuroinflammation. MMPs have been demonstrated to increase the permeability of the blood–brain barrier (BBB) by degrading the components of the basal lamina and contribute to the neuroinflammatory response in several neurological diseases. In response to cellular stress the brain cells express both constitutive and inducible MMPs. The MMPs belong to a larger class of metalloproteinases (MPs), which includes proteins containing a disintegrin and metalloproteinase domain (ADAM). MPs have complex roles at the cell surface and in the extracellular matrix. At the cell surface they are essential for cell survival and death. MMPs are inhibited by specific endogenous tissue inhibitors of metalloproteinases (TIMPs) that regulate the activity of them. MMP inhibitors have been developed for the treatment of several neurological disorders such as Alzheimer's disease, Multiple sclerosis, spinal cord injury, and traumatic brain injury. Since MMPs have both beneficial and detrimental roles; understanding their expression in numerous CNS insults and the use of MMP inhibitors is a good topic for scientists that will help in the treatment of the neurological disease.

Keywords: Matrix metalloproteinases, Neuroinflammation, Extracellular matrix

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