

Accepted Manuscript

Role of proteoglycans in neuro-inflammation and central nervous system fibrosis

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PII: S0945-053X(17)30410-9

DOI: <https://doi.org/10.1016/j.matbio.2018.01.015>

Reference: MATBIO 1413

To appear in:

Received date: 16 November 2017

Revised date: 26 December 2017

Accepted date: 20 January 2018

Please cite this article as: Femke Heindryckx, Jin-Ping Li , Role of proteoglycans in neuro-inflammation and central nervous system fibrosis. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Matbio(2017), <https://doi.org/10.1016/j.matbio.2018.01.015>

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*Role of proteoglycans in neuro-inflammation and central nervous system
fibrosis*

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Highlights

- Proteoglycans participate in the inflammatory response in the central nervous system, playing an important role in maintaining functionality of the extracellular matrix and contributing to the formation of the lesion scar.
- The formation of scar tissue restrains the site of injury but also creates an environment that prevents axon regeneration and tissue repair.
- Inflammation and fibrosis contribute to the pathogenesis of several chronic neurodegenerative diseases.

Abstract

Fibrosis is defined as the thickening and scarring of connective tissue, usually as a consequence of tissue damage. The central nervous system (CNS) is special in the sense that fibrogenic cells are restricted to vascular and meningeal areas. Inflammation and the disruption of the blood-brain barrier can lead to the infiltration of fibroblasts and trigger fibrotic response. While the initial function of the fibrotic tissue is to restore the blood-brain barrier and to limit the site of injury, it also demolishes the structure of extracellular matrix and impedes the healing process by producing inhibitory molecules and forming a physical

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