

## ESPS PEER-REVIEW REPORT

**Name of journal:** World Journal of Virology

**ESPS manuscript NO:** 14877

**Title:** New Advances on Glial Activation in Health and Disease

**Reviewer's code:** 02518970

**Reviewer's country:** Brazil

**Science editor:** Xue-Mei Gong

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CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	PubMed Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> The same title	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> Duplicate publication	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	<input type="checkbox"/> Plagiarism	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		[Y] No	<input type="checkbox"/> Major revision
		BPG Search:	
		<input type="checkbox"/> The same title	
		<input type="checkbox"/> Duplicate publication	
		<input type="checkbox"/> Plagiarism	
		[Y] No	

### COMMENTS TO AUTHORS

This is a well written comprehensive review that gives a broad overview of the role played by astrocytes in central nervous system pathologies, including viral infections. I have the following suggestions for this manuscript: 1) The introduction is an exact copy of the Abstract. Please modify one of them. 2) Several of the topics addressed in "CHANGES IN ASTROCYTE MORPHOLOGY" have already been discussed in the manuscript. For instance, the discussion about the glial scar seems too repetitive. 3) Here is one example of the redundancy: Page 22: "Furthermore, increasing or decreasing the numbers and sizes of astrocytes impacts the volume and alters the composition of the space between astrocytes (Shao et al. 1994). As a consequence of this, there would be neuronal dysfunction through excitotoxicity (Lee et al. 2010; Ernst et al. 2010), homeostatic imbalances (Giaume et al. 2007; Pierozan et al. 2012), damage to synapses (Cisneros and Ghorpade 2012; Rossi 2012)." Then, on Page 25: "Increased numbers of larger astrocytes would decrease the volume and alter the composition of the extracellular space between astrocytes and, as a result, disrupt neuronal activity (Shao et al., 1994)." (...) Page 26: "Structural changes in astrocyte morphology could result in impaired function (Sun et al., 2012; Drewes, 2012) causing neuronal dysfunction through



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excitotoxicity (Lee et al., 2010; Ernst et al., 2010; Sullivan et al. 2007), homeostatic imbalances (Giaume et al., 2007; Pierozan et al., 2012), and damage to synapses (Cisneros and Ghorpade, 2012; Rossi, 2012)". 4) Indeed, in my opinion, the section "CHANGES IN ASTROCYTE MORPHOLOGY" should be shortened and merged with "ASTROCYTE ACTIVATION: OVERVIEW" or should be shortened and placed just after this section. 5) "Toll-like receptors (TLRs), nucleotide-binding oligomerization domains, double-stranded RNA-dependent protein kinases, scavenger receptors, and mannose receptors ". This sentence appears two times in the manuscript (on Page 12) 6) It would be useful if the authors could include a table showing which of these receptors are expressed by astrocytes (example: Which TLRs? Which scavenger receptors? In vitro or in vivo?). 7) Page 16: "As discussed previously, astrocytes can release both pro- and anti-inflammatory factors, contributing crucially to inflammatory processes in the CNS". The anti-inflammatory factors were not mentioned previously. 8) "Activation of astrocytes and other glial cells influence the rate and intensity of regeneration of peripheral nerves in the CNS after injury (Berg et al., 2013)". Here, CNS should be replaced by PNS. In addition, Berg et al. have also considered the effects of GFAP and vimentin deficiency in Schwann cells. 9) "Prevention of reactive gliosis may also improve the integration of neural progenitor cells in the brain (Widestrand et al, 2007), indicating that the survival and generation of new neurons in the brain may benefit from astroglial modifications." Here, it would be enlightening to mention that these neural progenitor cells were grafted in the brain. 10) If possible, please consider including one figure. Minor comments: 1) The bibliography was not included in the manuscript. 2) All the abbreviations should be expanded at first mention (examples: GABA, Alzheimer's disease, and others). 3) Does "amyloid lateral sclerosis" mean "amyotrophic lateral sclerosis"? 4) Some sentences should be corrected: Page 4: "Gray and white matter astrocytes provide extensive metabolic support CNS as well as regulate". Page 17: "In clinical settings, pharmacological antagonists and immunosuppressive agents can used to prevent such pro-inflammatory responses". Page 24: "The tripartite synapse, in which information flows not only between the traditional pre- and postsynaptic neuronal pairings, but also between astrocytic processes (Perea et al., 2009)."



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**COMMENTS TO AUTHORS**

ESPS Manuscript NO: 14877 Comments for the authors In this paper, the authors review and discuss new advances on Glial activation in Health and Disease. Overall, the paper is interesting, updated, and comprehensive. Comments: - The paper is sometimes redundant and I suggest shortening - The authors should check for abbreviations (spell first time; then use abbreviation: e.g. pag 11, bottom: use BBB instead of “blood-brain-barrier”) - Pag 11-12: the paragraph “Additionally, both microglia.....(Kilielian, 2006, Kigerl ar al., 2014) is repeated two times. - PAg 22: amyloid lateral sclerosis should be “amyotrophic lateral sclerosis” - An image would be helpful for readers