Reviewer’s report

Title: Radix Scrophulariae Extracts (Harpagoside) Suppresses Hypoxia-induced Microglial Activation and Neurotoxicity

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Reviewer: Charanjit Kaur

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The authors of this study attempted to investigate the effects of Harpagoside on hypoxia-induced microglial activation and neurotoxicity. In vitro experiments were conducted using primary cultures of microglia from the cortex of neonatal mice.

There are some problems with the design of this study. The title of the paper is on hypoxia-induced activation of microglia and its suppression by Harpagoside. The introduction of the paper starts with Alzheimer’s disease (AD). Why is this so? There is no mention of hypoxic changes in the microglial cells as reported by many papers (for example --- Lu et al, Hypoxia-induced iNOS expression in microglia is regulated by the PI3-kinase/Akt/mTOR signaling pathway and activation of hypoxia inducible factor-1#, Biochemical Pharmacology, Volume 72, Issue 8, Pages 992-1000; Kaur et al, Roles of activated microglia in hypoxia induced neuroinflammation in the developing brain and the retina, J Neuroimmune Pharmacol 2013 Mar;8(1):66-78).

The methods are not described properly. What was the amount of harpagoside that was added to the cultures?

Further there is the lack of in vivo experiments. Hence the results of this study are not convincing.