

OPEN PEER REVIEW REPORT 1

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Title: Neuroprotective effect of Neuro-EPO in neurodegenerative disease: “Alea jacta est”

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COMMENTS TO AUTHORS

This paper interestingly reports on the effects of the natural cytokine brain cell synthesized erythropoietin (EPO) on neuron survival.

Starting, a part from the role in the regulation of erythropoiesis, from its neuroprotective effects against brain damage caused by permanent focal ischemia in animal experimental model, recombinant human EPO has been also tried to treat patients with ischemic stroke, reporting however a number of unfavourate side effects mainly related to its hematocrit and blood viscosity properties.

In order to overcome this and to achieve a clinical use, non-hematopoietic EPO derivatives that retain neuroprotective activity against neuronal injury but devoid of erythropoietic activity. Therefore Neuro-EPO, a non-erythropoietic variant of EPO, is considered form the authors as a promising neuroprotector in neurodegenerative diseases, once critical understanding of the cellular mechanisms that mediate neuronal injury are defined in terms of susceptibility to be modulated by Neuro-EPO.