

# Effects of photobiomodulation therapy on prevention of neuronal cell death in the hippocampus of rats submitted to neonatal anoxia

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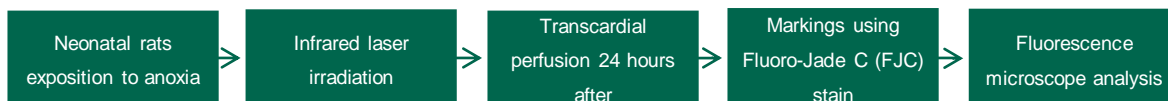
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## INTRODUCTION

Neonatal anoxia is one of the major causes of neonatal deaths. The oxygen deprivation caused by this injury can lead to important sequelae to surviving newborns, including impairment of motor and cognitive functions. On the other hand, studies have demonstrated the positive effect of photobiomodulation on neuronal systems. The objective of this study was to evaluate the effects of photobiomodulation in the prevention of neuronal cell death in the hippocampus of neonatal rats submitted to neonatal anoxia.

## MATERIALS AND METHODS

One to two-day old Wistar rats were divided in 4 groups: Control Sham (CS) and Anoxia Sham (AS), Control Laser (CL) and Anoxia Laser (AL). Irradiation of a neonatal wistar rat. The animals were irradiated with a diode laser ( $\lambda=808$  nm) with 100 mW for 60 seconds. Animals submitted to anoxia were irradiated shortly after a recovery process of pulmonary respiration. All the proceedings followed by this study are described in the following flowchart:



## RESULTS

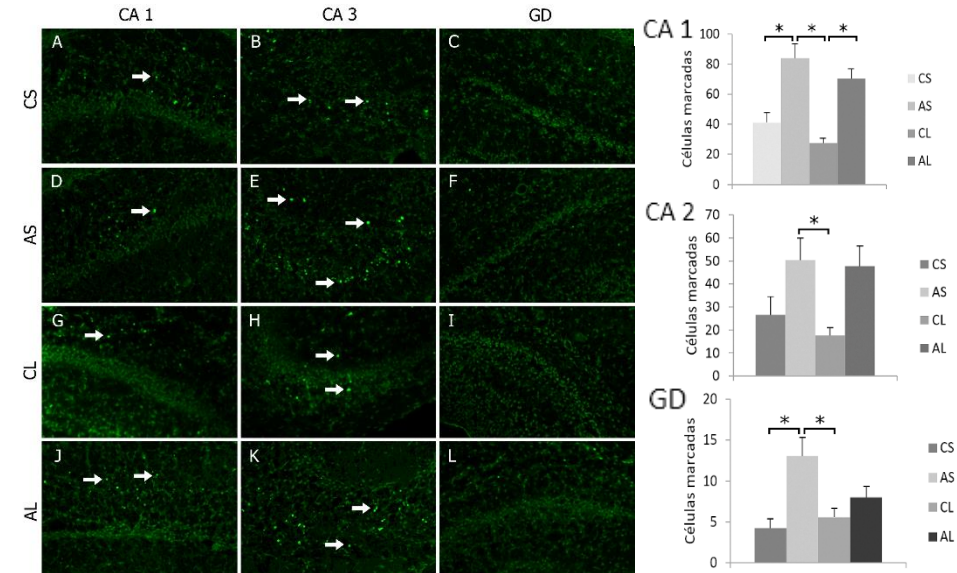


Figure 1: FJC+ cells marking and quantification of the hippocampus, organized horizontally by experimental groups and vertically by subregions of the hippocampus. The markings of FJC positive cells are depicted and indicated by the white arrows. Values were entered into a one-way analysis of variance (ANOVA), followed by pairwise comparisons (Tukey's HSD test). \*p-value<0.05

## CONCLUSION

Under the conditions used in this study, photobiomodulation therapy was not able to decrease anoxia-induced cell death in the hippocampus.