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Apoptosis and cell proliferation sites in the brain of *P. brachypomus* exposed to sublethal concentrations of Roundup Active®

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In Colombia, glyphosate is widely used for weed control, grain ripening and eradication of illicit crops. The Roundup Active® is the most used presentation of glyphosate. This situation has generated environmental, social, ecological and public health problems. For this reason, the objective was to determine apoptosis and cell proliferation sites in the brain of *P. brachypomus* exposed to sublethal concentrations of Roundup Active®. The fishes were exposed to two concentrations of glyphosate 1 y 3 mg acid equivalent (a.e.)/L and the control with 0 mg a.e./L, prepared from commercial product Roundup Active®. The individuals were maintained in a density of 20 fish/aquarium (20L) for 96h. The fishes were fed twice a day (8:00 y 16:00 h). Five fish per treatment were sacrificed, dissected and the brain was fixed in formaldehyde 4% for three days to 4°C. The samples were sectioned to 5 µm in a microtome CUT SLEE 4020. Immunohistochemical analysis was carried out to identify Caspase-3 to apoptosis y PCNA to cellular proliferation in tissue embedded in paraffin. Apparently, there is a slightly higher marking of cells Caspase-3 positive in the treatments exposed to Roundup Active®. On the other hand, the number of cells PCNA positive appear similar in all treatments evaluated. These findings suggest that Roundup Active® promotes apoptosis as an adaptive response to a xenobiotic. Acknowledgement CIAS 3146 and PIC- CIAS 3283.