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[Prostaglandins Leukot Essent Fatty Acids](#). 2004 May;70(5):449-53.

Intracellular oxidation by human glioma cell populations: effect of arachidonic acid.

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Abstract

Arachidonic acid (AA) and Gamma linolenic acid have been shown to limit glioma cell growth, stimulate apoptosis and lipid peroxidation. However, brain tumours are characterised by cellular heterogeneity and responding cell populations have not been identified. Brain tumour samples from patients were disaggregated. In cell preparations from 7 gliomas, reactive oxygen species (ROS), morphology and plasma membrane integrity were monitored +/-18-36 microM AA for 15-120 min using flow cytometry. Basal oxidative activity related to cell size/morphology, small granular cells showed lower activity. AA stimulation of ROS formation depended on cell size/morphology. Large, less granular cells showed greater AA stimulation. In 17 gliomas, GFAP immunofluorescence was demonstrated in larger cell populations. The large GFAP positive cell population with low side scatter was the highest responding cell population, suggesting selective tumour cell sensitivity to AA induced ROS formation. ROS may have a role in AA induced cell death and anti-tumour activity of AA in glioma.

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