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*8th
meeting on
medicinal
biotechnology*

BOOK OF
ABSTRACTS

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SCHOOL OF HEALTH
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BOOK OF ABSTRACTS OF THE 8TH MEETING ON MEDICINAL BIOTECHNOLOGY

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Glioma behavior under the influence of Cinnamic Acid: a cellular approach

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Background: Cancer is one of the biggest health problems worldwide, characterized by uncontrolled proliferation, rapid growth and the ability to invade other tissues (1). Gliomas are highly challenging tumours from a therapeutic perspective, so new and more effective therapeutic strategies have been investigated, with particular focus on the therapeutic potential of plant-derived compounds, such as Cinnamic Acid (2,3). Cinnamic Acid, extracted from *Cinnamomum cassia*, has proved to be a promising therapeutic agent, as it exhibits antitumor properties and low cytotoxicity toward healthy cells (4–6). This phenolic compound has the ability to cross the blood-brain barrier and affect tumour cell survival by reducing their proliferation rate, inducing apoptosis and inhibiting key signalling pathways involved in tumour growth (7–9).

Methods: This study aims to evaluate the glioma

behaviour under the influence of cinnamic acid, using a GL261 cell model. To this end, cells were cultured and treated with different concentrations of cinnamic acid (1×10^{-3} mol/L to 4×10^{-3} mol/L), followed by in vitro assays to assess its impact on cell viability and cell migration.

Results: The MTT assay performed on the GL261 cell line demonstrated that Cinnamic Acid is capable of reducing cell viability at all tested concentrations, with a cytotoxic effect that tends to be dose-dependent. At lower concentrations (1×10^{-3} mol/L and 2×10^{-3} mol/L), cell viability was approximately 83% (SD=13,3% and 13,9%, respectively) and the most pronounced reduction in cell viability was detected at the highest tested concentration (4×10^{-3} mol/L), with a viability of $76\% \pm 13,9\%$, corresponding to an approximately 24% reduction relative to the control (viability of 100%).

KEYWORDS: glioma, cinnamic acid, antitumoral effects, therapeutic potential, cell culture, mtt assay

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