

ROLE OF CALCIUM IN THE REGULATION OF APOPTOSIS IN HL-60 CELLS.

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Increase in intracellular calcium concentrations ($[Ca^{2+}]_i$) is critical event for the initiation of apoptosis in cells such as thymocytes. At previous works, we showed that dehydrocrotonin (DHC), obtained from the *Croton cajucara*, in free and its β -cyclodextrins (β CDs) inclusion complexes: β CD/DHC, Methyl- β -CD/DHC (Me β CD/DHC) and hydroxypropyl- β -CD/DHC (HP β CD/DHC) induced decreasing the GSH and Bcl-2, mitochondrial membrane depolarization ($\Delta\psi_m$), increasing in the mitochondrial swelling and cytochrome c release indicating altered mitochondrial function in HL60 cells. In this study, we evaluated the effectiveness of β CDs/DHC complexes in the role of $[Ca^{2+}]_i$ on modulation of the apoptosis-induced in human HL60 cells using Fura-2/AM labeling and flow cytometry. We obtained that DHC and its β CDs-complexes induced an increase of $[Ca^{2+}]_i$ after 24 h of treatment. The HP β CD/DHC 400 μ M showed to greater effectiveness arriving to 79.7%, while Me β CD/DHC and β CD/DHC 400 μ M induced 54.7 and 56.3%, respectively. The DHC showed to less effective, inducing an increase of 39.3%. These results indicate that the rise of the concentration of $[Ca^{2+}]_i$ is an important initial step in the apoptosis induction by DHC and its β CDs inclusion complexes.

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