CYTOTOXICITY EVALUATION OF FLAVONOIDS IN V79 CELLS

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Flavonoids are strong antioxidants, mainly due to their low potential and their capacity to donate several electrons or hydrogenations. In the cosmetic area flavonoids are used in the formulation of creams antiaging and solar filters. Cultured mammalian cells provide an important tool for evaluating the cytotoxicity of compounds with potential therapeutic or industrial activities. Different endpoints have been used to assess cytotoxicity in vitro, including the MTT reduction, neutral red uptake and nucleic acid. The aim of this work was to assess the cytotoxicity of some flavonoids (quercetine, rutin, morin, catechin and narigenin) on V79 fibroblast cell line since these compounds will be used in nanoparticle cosmetic formulations. In the cells treated with quercetine it was determined IC50 values of 250 and 450 µM evaluated by NRU and MTT reduction assays, respectively. Similar results were determined in the cells treated with morin (IC50 around 600 µM). Rutin was less cytotoxic than quercetine and morin, since at a concentration of 800 µM the cells showed 70% of viability. Narigenin did not present significant cytotoxicity evaluated for usual markers of cellular viability (0 - 600 µM). According to these results the most promising compound to be used in cosmetics containing nanoparticles is narigenin since it was the less cytotoxic flavonoid evaluated.

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