IN VITRO CYTOTOXICITY ASSESSMENT OF *ARANTO* (*KALANCHOE* SPP.) IN CELL LINES

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INTRODUCTION: Cancer is a silent and difficult-to-diagnose disease characterized by cell mutations and abnormal growth, and is one of the leading causes of death worldwide. Scientific interest in natural compounds with therapeutic potential has grown, driven by the traditional use of medicinal plants in the treatment of various diseases. Aranto (Kalanchoe spp), is a succulent plant that has its popular use widely disseminated for the treatment of various diseases, including cancer, however, there are not enough studies to prove the anticancer potential of this plant. In addition, the great variety and similarity between specimens of this species can lead to confusion in the correct association between the plant and its therapeutic effects. OBJECTIVE: The aim of this study was to evaluate the cytotoxicity of two specimens of Aranto, Kalanchoe daigremontiana (KD) and Kalanchoe laetivirens (KL), on cancer cell lines and controls. MATERIALS AND METHODS: For this purpose, Vero (control) and HT-29 (colon adenocarcinoma) cells were treated for 24 hours with different concentrations (0.05, 0.1, 0.025, 0.5 and 1 µg/mL) of the aqueous and ethanolic extracts of the two varieties of Aranto. After the treatment period, the cytotoxicity of the extracts was assessed using the MTT method, which determines cell viability. RESULTS AND CONCLUSION: The results showed that both extracts were capable of decreasing the cell viability of HT-29 cells, even at the lowest concentrations, with a statistical variation between $p<0.05$ and $p<0.001$. These results demonstrate the antiproliferative potential of Aranto extracts, a desirable characteristic for the treatment of cancer cells. However, significant cytotoxicity was also observed in Vero cells, being more pronounced in treatments with both extracts of the K. laetevirens variety ($p<0.001$) than the K. daigremontiana variety ($p<0.01$). Taken together, these results show a promising potential for the use of Aranto in the treatment of cancer; however, they raise the alarm about its indiscriminate use, since it can cause damage to healthy cells. Further studies should therefore be considered to better elucidate and warn of the possible risks of its unmonitored consumption.

Keywords: Kalanchoe daigremontiana, Kalanchoe laetivirens, HT-29, cell viability, anticancer potential.

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