

Cytotoxicity of a low molecular weight fraction from Aloe vera (*Aloe barbadensis* Miller) gel.

Author: Avila, H : Rivero, J : Herrera, F : Fraile, G

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Abstract:

The cytotoxicity of a low mol. wt fraction (LMWF) obtained from Aloe vera gel was determined by two different assays. Firstly, exposure of monolayers of chicken fibroblasts to LMWF induced disruption of intercellular junctions and detachment of individual cells from the bottom of the flask, with formation of cell-free gaps in the monolayer. Secondly, LMWF inhibited the production of reactive oxygen species by human polymorphonuclear leukocytes stimulated by zymosan, as followed by luminol-dependent chemiluminescence. The toxic activity of LMWF was compared to that of sodium dodecyl sulfate (a well-known toxic substance), aloe-emodin and aloin (an anthraquinone and its precursor present in Aloe vera cortex) using the chemiluminescence assay, and was found to be of similar potency to these toxic substances on a weight-to-weight basis. These results confirm that Aloe vera gel contains toxic low mol. wt compounds, and every effort must be made to limit the amount of these toxins in the commercially prepared Aloe vera gel products.