A CYSTEINE PROTEASE INHIBITOR ENRICHED FRACTION FROM *Mimosa caesalpiniaefolia* SEEDS DISPLAYS IN VITRO ANTITUMORAL ACTIVITY

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*Mimosa caesalpiniaefolia* is a Brazilian native plant characterized by its resistance to unfavorable climatic conditions. The objective of this study was to obtain a protease inhibitor enriched fraction (PIEF) from *M. caesalpiniaefolia* seeds and to evaluate its antitumor activity. The seeds were macerated and the proteins were extracted with 100 mM sodium phosphate buffer pH 7.0. The supernatant was fractionated with ammonium sulfate and the cysteine protease inhibitory activity of each fraction was measured. The fraction with higher specific inhibitory activity was fractionated by trichloroacetic acid. The protein content of all fractions was determined and qualitative analysis was performed by SDS-PAGE. The antitumoral activity of the fraction was carried out. The 3% TCA fraction obtained from 60-90% ammonium sulfate fraction presented two protein bands and higher cysteine protease inhibitory activity. This fraction was called PIEF. The PIEF showed cytotoxic activity against MCF7 tumor cells *in vitro* of 61.75% at 0.33 µg protein/mL. This result suggests that PIEF is a candidate to be further studied towards developing a new drug for cancer therapy. Supported by CNPq, FAPEMA.