Comparison of effects of the ethanolic extracts of Brazilian propolis on human leukemic cells as assessed with the MTT assay

Gilberto C. Franchi Jr, Cleber Silveira Moraes, Viviane Cristina Toreti, Andreas Daugsch, Alexandre E. Nowill, Yong K. Park. School of Engineering University of Campinas – UNICAMP, Rua Monteiro Lobato 80, 13083-862 Campinas, São Paulo, Brazil.

Propolis is a resinous products collected by honey bees. It was also reported that propolis has a wide variety of biological actions, including antimicrobial activity, antioxidant, anti-inflammatory, and suppressive effects of dioxin toxicity activities. The aim of this study was to compare the in vitro cytotoxic activity of green propolis (G12) and red propolis (G13) in human leukemia cells. These cells were incubated with different concentrations of propolis and 48 hours after the IC50 was calculated for each cells. The results showed that the red propolis has cytotoxic effect in vitro higher than green propolis. Red propolis showed cytotstatic in K562 cells and caused the same amount of apoptosis than its control Glevec. In conclusion, these results showed that red propolis (G13) is more cytotoxic than the green propolis (G12) in a variety of human cell lines of leukemia. Red propolis may contain drugs capable of inhibiting cancer cell growth. Therefore, further isolation of respective chemical ingredients from the red propolis (G13) for identification of the activities raising the specter of drugs with potential therapeutic use in oncology.

Keywords: Propolis; Leukemia; MTT; Apoptosis; Cytotoxicity.