

Pterodon pubescens Induces Cell Cycle Arrest By Reducing NF- κ B Activation

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The use of plant as a source of substances with anti-tumor effects has been demonstrated as potential alternative for treating cancer. *Pterodon pubescens* (Sucupira branca), a native plant from Brasil, is popularly known by the anti-arthritic properties of the ethanolic extract of its seeds (OPp). Anti-proliferative effects on leukemic cell have been demonstrated. In this work the OPp was sub-fractionated pursuing a sample with higher biological action and the effects on cell cycle of leukemic cells and on expression of NF- κ B and cyclins were demonstrated. OPp was obtained by treating seeds with ethanol (15 days). OPp was fractionated (partition) with hexan and the hexan fraction (Hex) was sub-fractionated (silica column) with different eluents resulting in eight sub-fractions (SF1-8). SF5 showed a major peak in chromatographic profile (GC) and higher cytotoxic effects (MTT method) on K562 cells. SF5 (30 μ g/mL) reduced cell viability by $83 \pm 1\%$ ($p < 0,001$) in 48h and induced cell cycle arrest (flow cytometry) in G1 phase, increasing the cell number in this phase ($68 \pm 13\%$, $p < 0.05$). SF5 increased cyclin D1 and reduced cyclin E2 mRNA levels (RT-PCR) in 12h. NF- κ B protein level (Western blotting) was also decreased in nucleus after 4h of treatment. This bio-guided fractioning of OPp resulted in a less complex sub-fraction and with more potent effect than the original one. Inhibition of NF- κ B activation and deregulation of the cyclins D1 and E2 mRNA metabolism, both cell cycle regulatory proteins, seems to be some molecular mechanisms involved in SF5 induced cell cycle arrest. Financial Support: FAPERJ, CAPES, CNPq, UERJ.