



 **Original Contribution**

CAT'S CLAW INHIBITS TNF α PRODUCTION AND SCAVENGES FREE RADICALS: ROLE IN CYTOPROTECTION

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(Received 31 January 2000; Revised 25 April 2000; Accepted 4 May 2000)

Abstract—Cat's claw (*Uncaria tomentosa*) is a medicinal plant from the Amazon River basin that is widely used for inflammatory disorders and was previously described as an inhibitor of NF- κ B. Cat's claw was prepared as a decoction (water extraction) of micropulverized bark with and without concentration by freeze-drying. Murine macrophages (RAW 264.7 cells) were used in cytotoxicity assays (trypan blue exclusion) in response to the free radical 1,1-diphenyl-2-picrylhydrazyl (DPPH, 0.3 μ M) and ultraviolet light (UV) light. TNF α production was induced by lipopolysaccharide (LPS 0.5 μ g/ml). Cat's claw was an effective scavenger of DPPH; the EC₅₀ value for freeze-dried concentrates was significantly less than micropulverized (18 vs. 150 μ g/ml, $p < .05$). Cat's claw (10 μ g/ml freeze-dried) was fully protective against DPPH and UV irradiation-induced cytotoxicity. LPS increased TNF α media levels from 3 to 97 ng/ml. Cat's claw suppressed TNF α production by approximately 65–85% ($p < .01$) but at concentrations considerably lower than its antioxidant activity: freeze-dried EC₅₀ = 1.2 ng/ml, micropulverized EC₅₀ = 28 ng/ml. In conclusion, cat's claw is an effective antioxidant, but perhaps more importantly a remarkably potent inhibitor of TNF α production. The primary mechanism for cat's claw anti-inflammatory actions appears to be immunomodulation via suppression of TNF α synthesis. © 2000 Elsevier Science Inc.

Keywords—UV irradiation, Oxidant, *Uncaria tomentosa*, Inflammation, TNF α , Free radicals, NF- κ B, Cytoprotection