

Chemopreventive Efficacy Of CdCl₂(C₁₄H₂₁N₃O₂) in Rat Colon Carcinogenesis Model Using Aberrant Crypt Foci (ACF) as Endpoint Marker

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Abstract : Colon cancer is one of the most prevalent cancers in the world. Cancer chemoprevention is defined as the use of natural or synthetic compounds capable of inducing biological mechanisms necessary to preserve genomic fidelity. Schiff based compounds are reported to exhibit a wide spectrum of biological activities of therapeutic importance. To evaluate inhibitory properties of CdCl₂(C₁₄H₂₁N₃O₂) complex on colonic aberrant crypt foci, five groups of 7-week-old male rats were used. Control group was fed with 10% Tween 20 once a day, cancer control group was intra-peritoneally injected with 15 mg/kg Azoxymethan, drug control group was injected with 15 mg/kg azoxymethan and 5-Flourouracil, experimental groups were fed with 2.5 and 5 mg/kg CdCl₂(C₁₄H₂₁N₃O₂) compound each once a day. Administration of compound were found to be effectively chemoprotective. Andrographolide suppressed total colonic ACF formation up to 72% to 74%, respectively, when compared with control group. The results also showed a significant increase in glutathione peroxidase, superoxide dismutase, catalase activities and a decrease in malondialdehyde level. Immunohistochemical staining demonstrated down-regulation of PCNA protein. According to the Western blot comparison analysis, COX-2 and Bcl2 is up-regulated whilst the Bax is down-regulated. according to these data, this compound plays promising chemoprotective activity, in a model of AOM-induced in ACF.

Keywords : chemopreventive, Schiff based compound, aberrant crypt foci (ACF), immunohistochemical staining

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