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**Evaluation of curcumin nano-micelle on of 1, 2, dimethylhydrazine-induced rat colon carcinogenesis in comparison with 5FU**

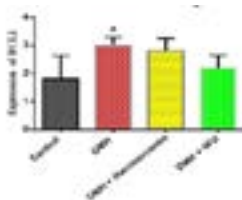
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**Objective:** Curcumin is a natural polyphenolic substance with anti-oxidative, anti-inflammatory and anti-cancer properties. Its therapeutic potential is substantially hindered by the rather low water solubility, rapid metabolism and low bioavailability, hence the need for suitable carriers. In the present study we aimed to evaluate effects of polymeric micelles of curcumin on experimental colon cancer model in Rat.

**Method:** Pathogen-free male Sprague–Dawley rats divided into 4 groups. animals from group A, B, C started to receive DMH intraperitoneal injection once a week at a dose of 20 mg/kg body weight in 0.9% normal saline. Group A served as DMH control. B, C were treated with nano-micelle curcumin and 5-FU respectively starting 4 weeks before first carcinogen challenge and continued till week 30 of experimentation. At the end of the 4 weeks all animals were killed by cervical dislocation and their colon removed and investigated for morphological and immunohistochemistry studies of apoptosis which expression of Bcl2, BAX and Caspase9 have been investigated.

**Results:** Morphological changes in Nano-curcumin groups was significant compared with DMH group but in protein expression of apoptotic factors, although decrease in Bcl2 expression and increase in BAX and caspase9 occurred in Nano-micelle group but these changes were not significant compared with DMH group(P>0.05)

**Conclusion:** According to results of this study, Nano-micelle of curcumin has some preventive effect in experimental model of colon cancer in vivo but has not induced apoptotic effect completely and more complementary studies are needed.



Graph: Effects of Nano-curcumin (FC) and DMH on Bcl2 expression in colon of rats. Data analyzed with Mann-Whitney test. \* significant compared with control (P<0.05)

### Biography

Ramin Ataee has received PhD in pharmacology from Tehran University of Medical Sciences in 2009. He has worked at Researcher of Institute Pasteur, Amol Branch 2000-2012. He is an assistant professor of pharmacology MUMS 2012. He has received 6 months scholarship QIMR, Brisbane Australia 2009. He is in editorial board of sciafrijournal, Editorial board of International Journal of Interdisciplinary and Multidisciplinary Studies (IJIMS) He has published 46 articles and 2 books. He is a member of Iranian pharmacy council, Iranian Medical council and Australian Society of Medical research (ASMR). His fields of research focuses on cancer pharmacology, neuro-pharmacology, herbal medicine researches and diabetes.

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