

## **Evaluation of Curcumin Nano-micelle on proliferation and apoptosis of HT29 and Hct116 colon cancer cell line**

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**Objective:** Curcumin is a natural polyphenolic material which has anti-oxidative, anti-inflammatory and anti-cancer effects. In this study we have attempted to assay anti proliferative and apoptotic properties of polymeric micelles of curcumin on two colorectal cancer cell lines and normal human fibroblast cells.

**Method:** Cancer cells HT29, HCT116 and normal human fibroblast cells (HGF) were subjected to concentrations of Nano- curcumin (1, 50, 100, 250 and 500 µg/ml). After incubating for 48 hours, cell viability has been assessed by MTT assay. Annexin V-FITC and Propidium iodide staining was done by flowcytometry for evaluation of apoptosis. The results have shown as mean  $\pm$  standard deviation. Statistical significance was assessed with ANOVA and Dunnetts t-test (P value < 0.01).

**Results:** According to MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) assay results, IC50 value of Nano- curcumin in HT29, HCT116 and HGF, were obtained 70.63, 123.9 and 168.53 µg/ml, in turn. We also discovered that Nano- curcumin can make indicative apoptosis in cancer cells which can be compared with cisplatin < 0.01

**Conclusion:** These results have shown remarkable anti-proliferative and apoptotic effects of polymeric Nano-micelles of curcumin in colorectal cancer cell lines.

### **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 field of research focuses on cancer pharmacology, neuro-pharmacology, herbal medicine researches and diabetes