Effects of Cholate Capped Gold Based Curcumin Nanoparticles Administration in Male Spargue- Dawley Rats- A Toxicological Study

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ABSTRACT

Curcumin, Indian solid gold and Indian saffron is a polyphenolic substance extracted from the plant *Curcuma longa* (Linn.). Nano-medicine has been observed limited or no side effects as a result of the injected dose. Hence, Nano based medicine are good modality to treat several diseases including tumour and this preclinical studies may give novel ideas for treating diseases in clinical level. Before going to the treatment one must evaluate the toxicological effect of Nanoparticles. Based upon the OECD guideline toxicological studies were undergone. To evaluate the toxicological effect of Cholate capped Gold based curcumin nanoparticles in Albino rat. Animals were housed in the standard cage with suitable laboratory condition and they were fed with chow pellets and water *ad libidum*. The study was approved by Institutional animal ethical committee (IAEC No. 01/12/13): Animals were divided into one control group (Group I received normal saline) and four experimental group. Experimental groups were based on three dosage (i.e. µl /Kg. body w.t) of Cholate capped Gold based curcumin nanoparticles as follows: 100 (Group II), 200 (Group III), 400 (Group IV) and acute toxicity dose (Group V). Toxicological assessments were made for a period of one month. There was no mortality in any of experimental groups and no change in body weight of the animals. Ulcerogenicity test indicate no gastric lesions. There are no alterations in general behavior of an animal expect grooming/cleaning of face. Biochemical parameters of liver and kidney functions test showed slight changes in enzyme level and test compounds. Histological studies showed mild alterations in the histoarchitechture of both liver and kidney. Overall the toxicological parameters indicate that these are non-toxic to the animals, further studies are required to assess the effective dose.

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