

Carbon nanotubes: Approaches in Modern therapeutics

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From National Conference on Natural Products as therapeutics, Medical Microbiology, Nanobiology and System biology: Current Scenario & Emerging Trends, 'NATCON-2014'.

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18-19 September 2014.

American J of Bio-pharm Biochem and Life Sci 2014 September, Vol. 4 (Suppl 1): P 60

ABSTRACT

Health effects of nanoparticles are attracting considerably and increasing the concern of the public and government worldwide. Carbon nanotubes represent one of the fastest developing nanoparticle materials with production set to increase rapidly as a consequence of the useful properties of this material. For example, CNTs are used for the delivery of antibiotics to different types of cells by selective transport through the membrane and vector in gene delivery. It can transport various types of proteins into the cells. CNTs have been tried to deliver anti-cancer drugs to human cancer cells. Functionalized-CNTs are being extensively explored in advanced biotechnological applications ranging from molecular biosensors to cellular growth substrates. CNTs might offer a non-toxic molecular ship to deliver the drugs safely to fragile bones. It can be used as a artificial kidney. The nanotube surface acts as the sensor by detecting the shape change of the DNA as it responds to the presence of target ions. CNT-plasma polymer-based amperometric biosensors for ultrasensitive glucose detection have been fabricated. CNT can be used as multifunctional biological transporters and near-infrared agents for selective cancer cell destruction. It can destroy the kidney tumors. Hence, conclusion may be made that carbon nanotubes holds hope for better diagnosis and treatment of various diseases, thus serving modern health care in a better way.