Editorial

## The Bleeding Edge-Nanotechnology in medical sciences

## Dr. Vijayan Venugopal

Faculty of Pharmacy, AIMST university, Jalan Bedong Semeling, 08100 Bedong, Kedah Darul Aman, MALAYSIA. **E-mail:** vijayanv2@gmail.com

DOI: 10.5530/jyp.2016.2.1

We have been hearing about nanotechnology for a long time back in both science fiction and in the media, but that not much has come of it so far. However, new platforms of nanotech-based treatments are on the horizon, and are ready to change the world of medicine.

Basically nanotechnology is the field that works at the nano scale range (One nanometer is one billionth of a meter).<sup>1</sup> Nanomedicine is linked nanotechnology for medical purposes. They are some other terms including biomedical nanotechnology, bionanotechnology and nanobiotechnology. The potency of nanotechnology took a long time to show its face, but it is finally starting to arrive in the form of sophisticated medical interference that will proudly change the nature of healthcare in the near future.

In the medicine technology, one of the biggest issues is our inability to correctly target interventions. Nanotechnology offers a way to direct interposition in the human body, potentially on a level of particular cells, using smart operating elements that are so small that they do not physically interfere with normal body function.<sup>2</sup> Fine fingers do less damage, and machines smaller than the micro capillary in the body can go everywhere that blood goes. If they can be made smart enough, such nanomedical devices can aptly choose where and how to intervene. Obviously, more will be possible when engineers can build robots that have more refined behaviours (like the ability to work under their own power), but even relatively primeval nanomachines of today have a lot of value.

Nanotechnology will play a vital role on all of our lives in the very near future in everything ranging from clothes to medicine. Below are a few things that will benefit your future based on the wondrous possibilities of nanotechnology. Nanotechnology is the cure-all medicine that we have been searching for years and it turns out that it's not actually a "medicine" at all!. The efficiency of Nanotechnology implemented in complicated, chronic untreated heart<sup>3</sup> and respiratory diseases<sup>4</sup> and to focus on diabetes<sup>5</sup>, cancer<sup>6</sup> and birth defects etc.

Many people are not capable of breeding simply because their bodies are not good hosts to a suitable environment. With the aid of nanotechnology, these little nanobots will quickly go to work at reconstructing your genitals and other reproductive characters so you'll once again be able to carry your own children. That means you don't have to adopt children, because you can now have your very own child that has your own genes. In the nanotechnology, tiny computers called nanites come together to work simultaneously throughout whatever object they are inserted into in order to perform amazing tasks at the molecular level and these really cool structures called nanotubes (carbon nanotubes) that are just as stiff as diamonds and one hundred times stronger than steel, yet they're six times lighter than steel. Nanomedicine will be able to move throughout your body and locate any and all cancer cells and not only label them so that doctors will be able to analyse those cells but the nanotechnology will also be able to destroy the individual cancer cells without harming much of the other body tissue around it.

Cancer will one day be completely curable thanks to the help of this ground breaking concept. In the nanomedicine, another millstone was nanites are irradiated with X-rays; the nanites produce their own electrons that can be used to target cancer cells. In tomorrow's world, scientists will be able to use nanocameras that can get right up next to these tiny atoms and see what's going on inside them.

The future aspects of nanotechnology are very bright, as it directly concerns the quality, comfort and better health of the community. In the future, we won't be so stained out about medical condition or even would be major injuries that today medical sciences simply cannot help. In the world of future, we will be so safer and happy with the linkage of nanotechnology in medical sciences.

## REFERENCES

- 1. Emerich DF, Thanos CG. Nanotechnology and medicine. Expert Opin Biol Ther. 2003;3:655-63.
- Wang Z, Ruan J, Cui D. Advances and Prospect of nanotechnology in stem cells. Nanoscale Res Lett. 2009;4(7):593-605.
- Wagner V, Dullaart A, Bock AK, Zweck A. (2006). The emerging nanomedicine landscape. Nat Biotechnol. 2006;24(10):1211-7.
- Ekambaram P, Abdul Hasan, Sathali A. Formulation and Evaluation of Solid Lipid Nanoparticles of Ramipril. Journal of Young Pharmacists. 2011;3(3):216-220.
- Cavalcanti A, Shirinzadeh B, Freitas RA, Hogg T. Nano robot architecture for medical target identification. Nanotechnology. 2008;19(1):15.
- 6. Freitas RA. Nanotechnology, nanomedicine and nanosurgery. Int J Surg. 2005;3:243-6.