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Researchers at IISc use nanomaterials for treating Parkinsonâ??s

09 October 2017 | News

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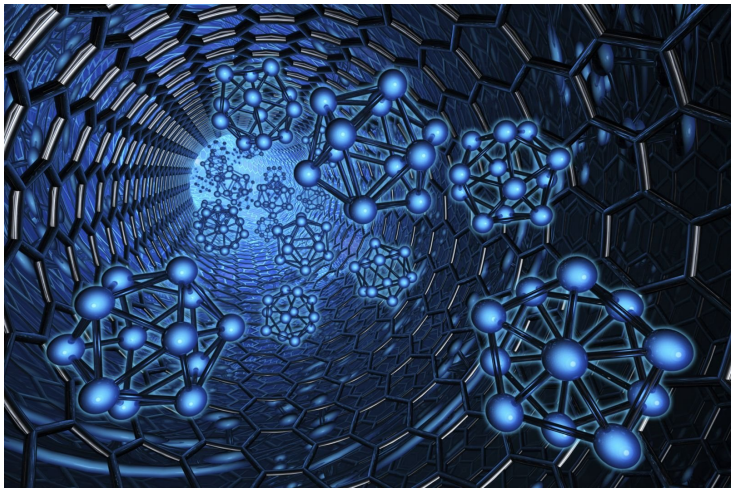

A team of researchers from the Indian Institute of Science (IISc) Bengaluru has fabricated a metal oxide nanomaterial that is capable of mimicking all three major cellular antioxidant enzymes, thereby controlling the level of reactive oxygen species (ROS) inside cells.

A problem arises when ROS is generated in excess and the enzymes are unable to control the level of ROS. Oxidative stress due to excessive ROS causes damage to DNA, proteins and lipids; oxidative stress is implicated in several diseases such as neurodegeneration, cancer, diabetes and cardiovascular diseases.

Based on *in vitro* test results, the nanomaterial appears a promising candidate for therapeutic applications against oxidative stress-induced neurological disorders, particularly Parkinson's.

The manganese oxide nanomaterial was able to control the level of Reactive Oxygen Species inside the cells. They did not scavenge the ROS completely. If they do then the normal physiological functions of the cells get affected. It actually scavenges reactive oxygen species and brings it to optimum level so normal functions of the cell are not affected.

The nanozymes have therapeutic potential particularly for Parkinson's disease. The researchers are trying to design an animal model in mice for *in vivo* testing.