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## Exploiting nanomaterial-induced selective autophagy for enhanced clearance of intracellular aggregate-prone proteins

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Autophagy is a key cellular process for the degradation of cellular constituents such as invading viruses, damaged organelle and long-lived proteins and plays critical roles in many physiological and pathophysiological conditions. A variety of nanomaterials, including carbon, metal, and rare earth oxide nanoparticles, have been demonstrated to induce elevated level of autophagy in different cell types. Recent studies have demonstrated that, in addition to elliciting bulk and non-selective autophagy, some nanomaterials can also induce selective autophagy, which target particular intracellular constituents for degradation. In this talk, I will present the latest results from our laboratory, which demonstrated that engineered nanomaterials, through inducing selective autophagy, enhance clearance of mutant Huntingtin and mutant p53, two types of aggregate-prone intracellular proteins that play critical roles in Huntington's Disease and cancer. These studies may pave the way for the exploitation of nanomaterial-induced autophagy for therapeutic applications towards cancer and neurodegenerative diseases.

### Biography

Long-ping Wen has graduated from Xiamen University in 1982 (BS) and has obtained his PhD from University of California, Los Angeles, USA in 1988. He has over 30 years of experience in Biomedical Research at various academic institutions in the USA, Singapore and China. Since 2002, he has been working as a Full Professor at University of Science and Technology of China, with a research interest focusing on Nanobiology and Nanomedicine. He has published over 80 research papers in international peer-reviewed journals with more than 3000 citations and has an H-index of 37.

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