Potentially More Effective Nanodrugs for Pancreatic Cancer Discovered

Pancreatic cancer is the most lethal of the solid tumors and the fourth-leading cause of cancer-related deaths in North America. Recently, CAS scientists and their co-workers announced that they found a potentially more effective nanomedicine for pancreatic cancer and their findings also provided insights into a brand-new design of nanomedicines for fatal diseases such as pancreatic cancer in the future.

In cooperation with researchers from the Computational Biology Center, IBM, scientists from the CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety conducted a series of experiments at animal, tissue, and cellular levels.

They have found that endohedral metallofullerenol $Gd@C_{82}(OH)_{22}$ can successfully inhibit the activity and can also effectively block tumor growth in human pancreatic cancer xenografts in a nude mouse model. Apart from providing insights into a brand-new design of nanomedicine for fatal diseases such as pancreatic cancer, these findings also imply that the pharmacokinetic action of nanoparticles could be markedly different from the traditional target-based molecular drugs.

Since this new discovery aroused huge international responses, Prof. ZHAO Yuliang, the leading scientist in this research team was elected the associated chief editor of *Nanomedince* in 2012. Their discovery was published in Vol.109 No. 38 of the *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* in September before print, following their previous publications on PNAS in 2010 and 2011.
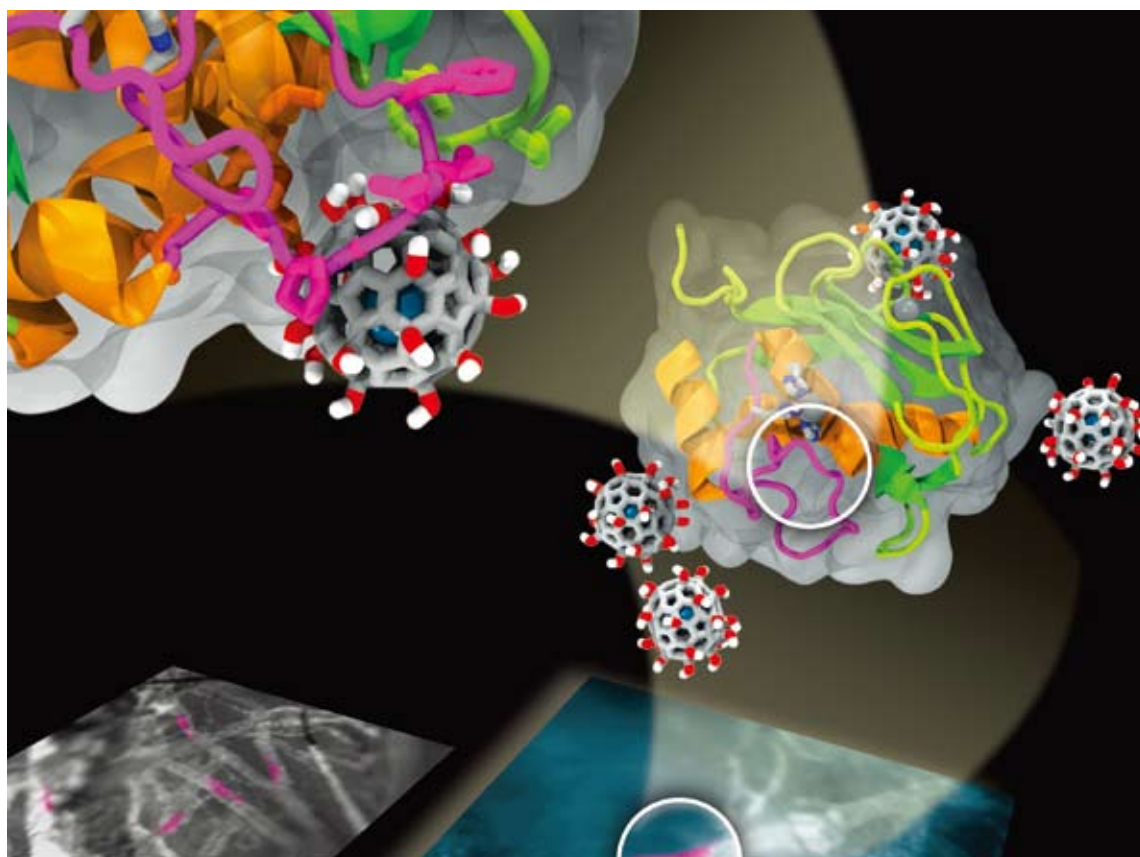
Experiments show that pharmacokinetic action of nanoparticles could be markedly different from the traditional target-based molecular drugs.