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HKUST Biochemist Awarded HFSP Research Grants

Prof Mingjie Zhang, associate professor of Biochemistry at the Hong Kong University of Science and Technology (HKUST), has recently been awarded a grant by the prestigious Human Frontier Science Program Organization for an international research project on nitric oxide that could lead to more effective treatments for stroke and muscular dystrophy.

Research grants from the Human Frontier Science Program (HFSP) are highly regarded for the unique support they give to international and interdisciplinary research in the fields of brain function and the molecular approach to biological functions. Projects are judged on their scientific merit by international panels of eminent scientists who meet annually in Strasbourg, France. The majority of scientists who receive HFSP grants are working in North America, Europe and Japan. Prof Zhang is one of the very few scientists from Hong Kong.

"This is a huge encouragement for my research team," said Prof Zhang, principal investigator of the project. "I am very happy that our research achievements in structural biology have been internationally recognized and that we're able to conduct international, multi-disciplinary collaborations with other world-class universities and institutes in the world," he said.

Prof Zhang is working with Prof David Bredt from the University of California, San Francisco, and Prof Shin'ichi Takeda from the National Institute of Neuroscience in Tokyo on the physiology and pathology of nitric oxide in excitable tissues. The project will draw on Prof Zhang's expertise in structural biology, Prof Bredt's knowledge of cellular and molecular biology, and Prof Takeda's interest in the molecular pathogenesis of muscular dystrophy. They will receive a total of US\$600,000 over a period of three years.

Using NMR spectroscopy, Prof Zhang's research team has not only defined the structures of neuronal nitric oxide synthase and its regulatory protein, but also made major advancements in understanding the functional regulation of this important protein. They have also discovered a novel mechanism for nitric oxide signal transduction, providing insights into the development of new drugs for the treatment of stroke and muscular dystrophy.

Prof Zhang received his PhD degree from the University of Calgary in 1993. Prior to joining HKUST in 1995, he made a number of outstanding contributions in the area of calcium-binding proteins. At HKUST, his research team is working on the structure and function of the proteins and enzymes which play key regulatory roles in biological signal transduction. Their outstanding research results have been published by Nature Structural Biology, an internationally renowned scientific magazine devoted to fundamental life-sciences research.



[Hi-res image](#) Prof Zhang and his research team