

Foundation funds projects targeting new cancer care

Two promising cancer research projects led by investigators at the Keck School of Medicine of USC and the USC Norris Comprehensive Cancer Center recently received generous funding from the Tower Cancer Research Foundation.

Tower Cancer Research awarded five-year, \$500,000 grants to both Michael Press, MD, PhD, professor of pathology at the Keck School and holder of the Harold E. Lee Chair in Breast Cancer Research, and the team of Guo-Min Li, PhD, and Xiaojiang Chen, PhD, professor of molecular biology at the Dornsife College of Letters, Arts and Sciences and a member of the USC Norris Comprehensive Cancer Center. The recipients believe that their research has the potential to result in next-generation cancer therapies.

In his research, Press has discovered that a protein called Pololike Kinase 4, or PLK4, plays an important but not well-known regulatory role in cell division, which could make PLK4 a potentially important cancer therapeutic target.

Press believes that better understanding of PLK4 and the mechanism of action of its inhibitor will help him develop a biomarker profile to identify those types of metastatic cancers arising from the breast, ovary and colon/rectum that have a high probability of complete response to a PLK4 inhibitor.

Li and Chen have been investigating DNA mismatch repair, which is the system that recognizes mistakes during cell division and repairs the DNA.

Cancer cells undergo error-prone DNA replication during cell division, which generates mismatches that lead to mutations. Understanding this, Li and Chen set out to find a way to inhibit the error-prone DNA synthesis, which could halt the development of all types of cancer.

To that end, the duo has recently created a mutant DNA repair protein that binds to cancer cell-specific DNA errors during cancer growth, leading to cell death. With this grant, they aim to develop this mutant DNA repair protein into an effective drug for all types of cancer.

"One of the ways the Tower Cancer Research Foundation is hoping to end cancer is to fund cutting-edge research projects that advance our understanding of cancer and to find novel ways to attack this disease," said Linda David, executive director of Tower Cancer Research Foundation. "We are proud to support both Dr. Press and Drs. Li and Chen, whose research we believe will lead to better cancer treatments in the near future."

— Hope Hamashige