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Leveraging Targeted Protein Degradation to Overcome Resistance in Cancer Immunotherapies

Dr. Wang received his B.S. degree in chemistry from Peking University and Ph.D. in organic chemistry from the Ohio State University. As a postdoc at the University of North Carolina at Chapel Hill, he worked in the field of drug delivery and nanomedicine. In 2011, he started his independent career as an assistant professor and CPRIT scholar in Cancer Research in the Department of Pharmacology and Chemical Biology at Baylor College of Medicine. He is currently the Michael E. DeBakey, M.D., Professor in Pharmacology in the same department. His research centers on chemistry and serves biology, spanning from chemical biology tool and method development to rational design of therapeutics, including small molecule inhibitors, protein degraders, and antibody-drug conjugates.

Abstract: PROTACs are a novel therapeutic modality to inhibit the scaffolding functions of proteins. I will present our recent work on a novel PROTAC to boost antitumor immunities of cancer immunotherapies. One common feature for immune checkpoint blockades (ICBs), activated cytotoxic T cells, CAR-T and CAR NK cells is that they all kill cancer cells through granule exocytosis and death ligands to activate programmed cell death. However, cancer cells that are insensitive to these programed death mechanisms will evade killing mediated by the antitumor immunity. We developed a novel PROTAC that can synergize with anti-PD1 to trigger immunogenic cell death and significantly inhibit tumor growth in an immunotherapy insensitive B16F10 mouse melanoma mouse model.