

Predictive biomarkers for the death receptor targeted cancer therapies

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The death receptors (DRs) TNFR1, Fas/CD95, DR4 and DR5 are attractive targets for cancer treatment. When expressed on cell surface, they can transduce death signals from their cognate ligands such as TNF α , Fas ligand, and TNF-related apoptosis inducing ligand (TRAIL). Multiple clinical trials are ongoing to evaluate the antitumor activities of the recombinant forms of human TNF α variants, Fas/CD95 ligand, TNF-related apoptosis inducing ligand (TRAIL) and its agonistic antibodies. However, concerns about drug resistance in tumor cells are shifting the emphasis toward the identification of predictive biomarkers as well as effective combination therapies. Our laboratory investigates the molecular mechanisms involved in cancer drug action and resistance. This presentation highlights our recent findings in molecular determinants of TRAIL resistance and the implication in discovery of biomarkers for prediction of tumor sensitivity to the DR-dependent therapies.

Biography

Dr. Baolin Zhang is a Senior Investigator and a Drug Quality Reviewer at the Division of Therapeutic Proteins, Office of Biotechnology Products, Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA). He is responsible for the quality review (Chemistry, Manufacturing and Control) for new therapeutic proteins under investigational new drug applications (INDs) and biologic license applications (BLAs). He also leads a research team in the conduct of FDA mission-related research improving drug safety and efficacy. His field of expertise lies in protein biochemistry, cell growth and death signaling, and cancer drug development, as evidenced by over 60 peer-reviewed articles. He serves as an Editorial Board member or reviewer for numerous peer-reviewed journals. Prior to joining FDA in 2001, he was a Senior Research Scientist at University of Tennessee, College of Medicine. He had also served as Professor and Deputy Director at the Beijing Center for Biologics Development and Research, and Associate Professor at Nanjing University. He earned his Ph.D. in chemistry from Peking University in 1992. He has received many awards including the 2010 FDA/CDER Scientific Achievement Awards for Excellence in Laboratory Science and the 2011 FDA/CDER Leadership Excellence.

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