

Zestern Analysis, from theory into practice in high throughput immunoblot analysis

Jiandi Zhang

Zestern Biotechnique LLC and Yantai Zestern Biotechnique Co. LTD, USA

The completion of the human genome projects marks the arrival of genomic research era, where genetic information is accumulated and analyzed in an unprecedentedly speed in the last decades significantly change the world of Cancer research. In contrast, proteomic research in Cancer Research is clearly lagging behind due to lacking of high throughput method in immunoblot analysis. While antigen-antibody interaction serves as the basis of immunoblot research, it faces a long-lasting challenge of cross-reactivity of antibodies. In this talk, a novel method, Zestern analysis, is demonstrated to address this issue with clear advantages of simple, fast, specific and quantifiable, suitable for high throughput analysis of protein samples. The method follows a standard dot blot protocol until the formation of immunocomplex on the membrane. An elution step is added in Zestern analysis where a competing molecule based on the epitope of detecting antibody is used to liberate the detection antibody from the immunocomplex into elution solution for direct quantification. A working system of Zestern analysis is shown in this talk where both the tagged and endogenous proteins were analyzed using this method under various experimental conditions. Continuing exploration of this method may revolutionize the field of proteomic research with direct impact on high throughput immunoblot analysis to move the field of Cancer Research forward.

Biography

Jiandi Zhang received his Doctorate from Department of Cell Biology, Duke University with Drs. Yusuf Hannun and Lina Obeid on the lipid mediators and chemotherapeutic agent-induced apoptosis. He went on to complete his postdoc training with Nobel Laureates Drs. Mike Brown and Joe Goldstein at UT Southwestern Medical Center working on IRS-2 and insulin signaling pathway. Dr. Zhang continued to work on insulin signaling pathway and regulatory effect of SirT1 on this pathway with several independent publications. In 2012, he patented Zestern technique as the improved immunoblot technique of Western blot and Dot blot analyses. Right now, he serves as the Founder and CEO of Zestern Biotechnique LLC to promote this technique in the field of protein analysis. He believes the adoption of this technique in basic research and clinical studies would significantly improve the efficiency and accuracy of protein analysis over existing immunoblot methods.