Monitoring Protein:Protein Interactions in Living Cells

Monday, May 23rd
3:00pm- 4:00pm
Location: Bressler (BRB), Rm 9-033

Protein:protein interactions (PPIs) are essential elements of cellular signal transduction networks. Although numerous approaches exist to monitor PPIs in vitro, methods for intracellular detection have been more limited. We developed NanoLuc® Binary Technology (NanoBiT™), a two-subunit system based on NanoLuc® luciferase that can be applied to the intracellular detection of PPIs. Large BiT (LgBiT; 18 kDa) and Small BiT (SmBiT; 11 amino acid peptide) subunits are expressed as fusions to proteins of interest, where PPI facilitates subunit complementation to give a bright, luminescent enzyme.

In contrast to many split systems, the LgBiT:SmBiT interaction is reversible, allowing the detection of rapidly dissociating proteins. Other advantages include 1) better sensitivity, allowing fusion protein expression at or near physiological levels; 2) fusion to a peptide or a small, structurally stable protein domain; 3) real-time measurements using a non-lytic assay format, and 4) subunits with reduced affinity for self-association.

Presented by
Kristin Riching, Ph.D.
Senior Research Scientist, Promega

Dr. Kristin Riching received her Ph.D. from the University of Wisconsin, where she characterized the mechanical properties of collagen and their effects on breast cancer cell migration in invasive ductal carcinoma. She then worked as a postdoctoral researcher at Promega studying protein interactions within the ErbB signaling network and their roles in cancer progression. She has been at Promega for two years and is currently a Sr. Scientist developing technologies to characterize global protein:protein interactions.

NanoBit – Top10 Innovation of the Year by Scientist Magazine

Refreshment will be provided

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