



# Procarta™ SH2 Domain Plex

## High-throughput Phosphotyrosine SH2 Interaction Detection

### The SH2 domain—a key to understanding phosphotyrosine-dependent signal transduction

SH2 domains are one of the many protein domain families that mediate protein-protein interactions in signal transduction. Like other domains, SH2 domains are defined by a conserved region of amino acid residues. The folding characteristics of this sequence of 100-amino acids allow these domains to specifically recognize and bind to phosphotyrosine-containing ligands.

There are approximately 120 different SH2 domains that bind to 110 different proteins in the human genome. These protein-protein interactions involving phosphotyrosines, like those made possible by SH2 domains, are a primary means of recruiting signaling proteins, and thus play a major role in signal transduction.

SH2 domains can be found in enzymes, adaptor proteins, regulatory subunits of signaling proteins, scaffold proteins, transcription factors and oncogenic proteins. These proteins are integral to the signaling process because they act as adaptors between receptors and downstream signaling molecules, transmitting signals within cells and regulating the kinase activity of specific proteins.

Protein phosphorylation is a major conduit of information for cellular responses, and defects in SH2 domain-dependent signaling are often directly or indirectly shown to be involved in human diseases.

The Procarta SH2 Domain Plex assay is a 30 plex assay capable of profiling identifying differences of measuring SH2 proteins that have bound to phosphorylated tyrosine residues of proteins.

### Assay Highlights

Luminex® based, 96 well format

Simultaneously profile up to 30 SH2 Domain - phosphotyrosine protein interactions.

Mix and Match to create your own plex set

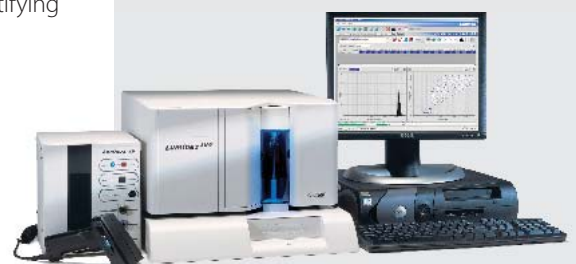
Complete Assay in less than 4 hours

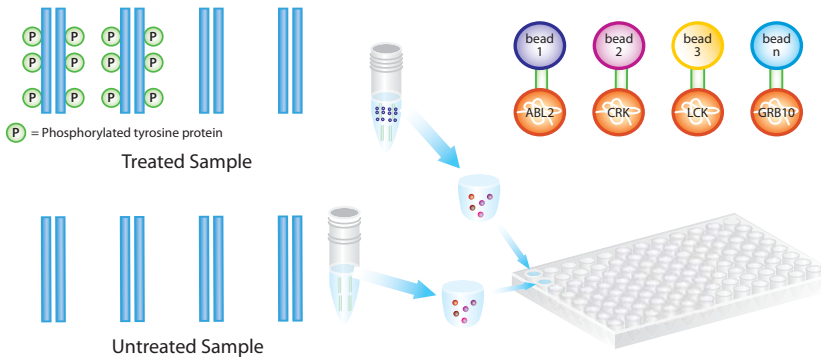
Profile SH2 domains across different cell lines and drug treatments

### Procarta SH2 Domain Plex

3BP2	CSK	P85B-D1
ABL2	VAV3	P85B-D2
BTK	LCK	PLCG1-D1
GRAP	LCP2	PTPN11-D2
CRK	MATK	PTPN6-D2
CRKL	NSP1	SOCS2
DAPP1	GRB2	STAP2
FYN	P55G-D1	SYK-D2
GRB10	P85A-D1	TNS
GRB14	P85A-D2	SHC1

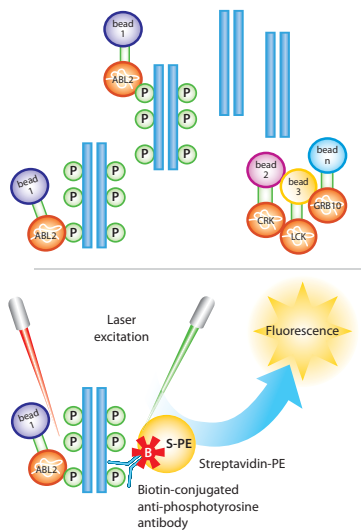
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### SH2 Domains bound to Luminex Beads

Panomics provides Luminex coded beads that are conjugated with SH2 protein domains. Treated and Untreated cell lysates are incubated to the beads in separate wells of the 96 well filter plate.



### Phosphotyrosine Proteins bind to SH2 Beads

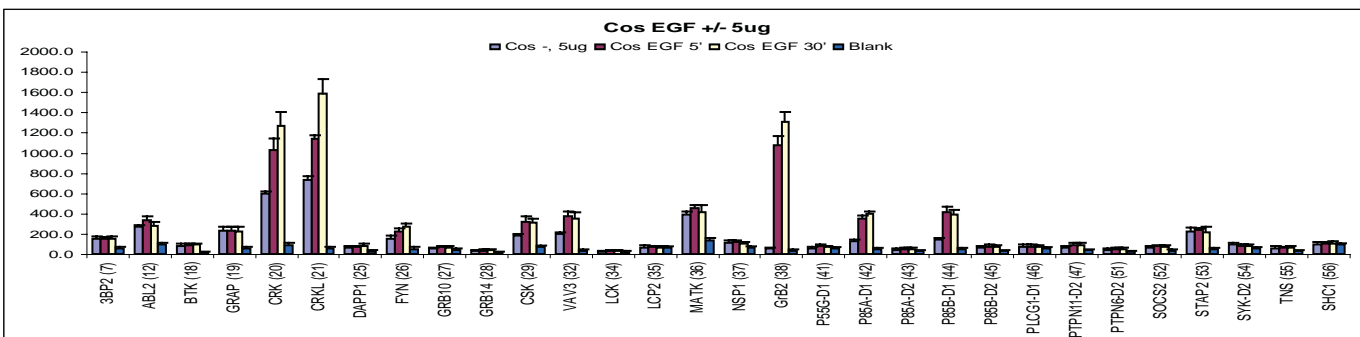
Phosphotyrosine proteins will bind to specific SH2 domains that are conjugated to the Luminex coded beads. Unphosphorylated tyrosine proteins will not bind to the SH2 beads.

### Detection

Anti-phosphotyrosine antibody is added, followed by the addition of Streptavidin-PE. The complex is then analyzed on the Luminex system. The beads that do not have any bound phosphoproteins will have little or not fluorescence

### Data

COS cells were treated with and without EGF. Mean fluorescent intensity is plotted against each SH2 domain of the 30 plex assay.



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