

BD Phosflow Human CrkL (pY207) Monoclonal Antibodies

Features

Useful for the identification of cells that express the BCR-ABL fusion protein

Suitable marker for the study of CrkL signal transduction

Available as purified and in a wide selection of fluorochrome-conjugated formats including Alexa Fluor® 488, Alexa Fluor® 647, and PE

BD Biosciences now offers purified and fluorochrome-conjugated antibodies for the study of phosphorylated Crk-Like (CrkL), a key adaptor molecule in BCR-ABL signaling.

Anti-human CrkL (pY207) antibody (clone K30-391.50.80)

The new BD™ Phosflow human CrkL (pY207) antibody (clone K30-391.50.80) reacts with CrkL when phosphorylated at tyrosine 207. It does not react with the unphosphorylated protein. CrkL is a 39-kDa adaptor protein that is preferentially expressed in hematopoietic cells. CrkL contains SH2 and SH3 binding domains that allow it to interact with a variety of effector proteins including paxillin, p130Cas, c-Cbl, c-Abl, and C3G.

Available conjugates include Alexa Fluor® 488, Alexa Fluor® 647, and PE formats to enable maximum flexibility for design of multicolor panels in combination with any of our family of BD FACST™ brand flow cytometers. Antibodies were tested in human model systems but are likely to cross-react with mouse and rat model systems due to predicted sequence identity.

Discovery of Crk proteins

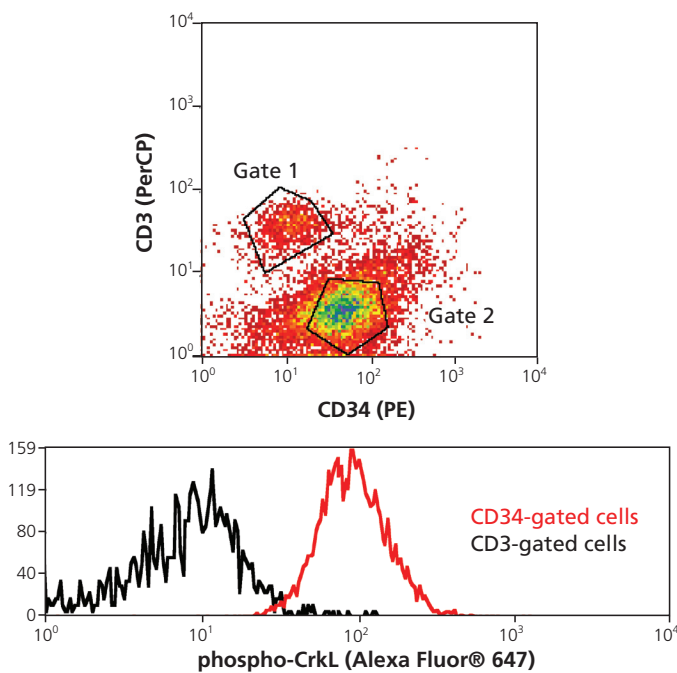
Crk adaptor proteins were discovered in the 1980s as a novel retroviral gene product v-Crk. CrkL is a cellular homolog to v-Crk and contains Src Homology 2 (SH2) and Src Homology 3 (SH3) domains separated by flexible linker sequences. SH2 and SH3 domains bind to many proteins and aid in the formation of molecular complexes. SH2 domains typically bind to proteins that contain a phosphorylated tyrosine residue followed by specific residues.^{1,2}

CrkL proteins are important for many biological processes including cell adhesion, cell proliferation, cell migration, apoptosis, and regulation of gene expression.¹

The role of CrkL in BCR-ABL signaling

The human gene encoding the CrkL protein was discovered through its localization on chromosome 22 near the breakpoint cluster region (BCR). CrkL forms complexes with BCR-ABL. CrkL interacts with the proline-rich region of the C-terminal of the Abl kinase.²

Mutations of BCR-ABL in the proline rich C-terminal, as well as the Grb2 and CBL binding domains, prevent the induction of leukemia in mice by BCR-ABL. These mutations of the BCR-ABL pathway severely compromise the ability of BCR-ABL to activate PI3 kinase and MAP kinase pathways. Interestingly, Stat5 activation is maintained.³



Overlay Gate	Cell Population	Median
Gate 1	CD3 ⁺	8.98
Gate 2	CD34 ⁺	93.06

Figure 1. Peripheral blood mononuclear cells from a qPCR BCR-ABL-positive sample were fixed, permeabilized, and stained with PerCP anti-CD3, PE anti-CD34, and Alexa Fluor® 647 anti-phospho-CrkL (Y207) clone K30-391.50.80 (Cat. No. 560790). Phospho-CrkL staining was assessed on CD3-positive and CD34-positive cells. The CD34-positive cells have 10-fold greater phospho-CrkL than the CD3 cells (negative control) from the same sample. Data courtesy of Dr. Brian Druker.

Visit bdbiosciences.com/phosflow for more information.

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References

1. Birge RB, Kalodimos C, Inagaki F, Tanaka S. Crk and CrkL adaptor proteins: networks for physiological and pathological signaling. *Cell Commun Signal*. 2009;7:13-36.
2. Feller SM. Crk family adaptors-signalling complex formation and biological roles. *Oncogene*. 2001;20:6348-6371.
3. Johnson KJ, Griswold IJ, O'Hare T, et al. A BCR-ABL mutant lacking direct binding sites for the GRB2, CBL and CRKL adaptor proteins fails to induce leukemia in mice. *PLoS One*. 2009;4:e7439.

Ordering Information

Description	React	Clone	Isotype	Format	Size	Cat. No.
CrkL (pY207)	Hu	K30-391.11.30	Mouse IgG _{2b} , κ	Purified	0.1 mg	558386
		K30-391.50.80	Mouse IgG _{2b} , κ	Alexa Fluor® 488	50 tests	560789
				Alexa Fluor® 647	50 tests	560790
				PE	50 tests	560788

Related Products

Description	React	Clone	Isotype	Format	Size	Cat. No.
BCR-ABL Protein Kit				BD™ CBA Kit	50 tests	643939
BCR (pY177)	Ms	J52-309	Mouse IgG _{2b} , κ	Purified	0.1 mg	558248
Stat5 (PY694)	Hu, Ms	47	Mouse IgG ₁ , κ	Alexa Fluor® 488	50 tests	612598
				Alexa Fluor® 647	50 tests	612599
				Pacific Blue™	50 tests	560311
				PE	50 tests	612567
				PE-Cy™7	50 tests	560117
				PerCP-Cy™5,5	50 tests	560118
BD Phosflow Perm Buffer III					125 mL	558050
BD Phosflow Perm Buffer IV (10X)					50 mL	560746

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