Revision 3

Store at -20C
#3908

Bcr-Abl (b2a2 Junction Specific) (L99H4) Mouse mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:
WB	H	Endogenous	210	Mouse IgG2a	#A9UF07

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Bcr-Abl (b2a2 Junction Specific) (L99H4) Mouse mAb detects endogenous levels of Bcr-Abl (b2a2) fusion proteins. This antibody does not cross-react with the b3a2 isoform of Bcr-Abl.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the b2a2 junction site sequence of human Bcr-Abl.

Background

The Bcr gene was orginally identified by its presence in the chimeric Bcr-Abl oncogene (1). The amino-terminal region of Bcr contains an oligomerization domain, a serine/threonine kinase domain, and a region that binds SH2 domains. The middle of the protein has a PH domain and a region of sequence similarity to the guanine nucleotide exchange factors for the Rho family of GTP binding proteins. The carboxy-terminal region may be involved in a GTPase activating function for the small GTP-binding protein Rac (2,3). The function of wild type Bcr in cells remains unclear. PDGF receptor may use Bcr as a downstream signaling mediator (4). Research studies have shown that the Bcr-Abl fusion results in production of a constitutively active tyrosine kinase, which causes chronic myelogenous leukemia (CML) (5). Tyr177 of Bcr is phosphorylated in the Bcr-Abl fusion protein, which plays an important role in transforming the activity of Bcr-Abl (6). Phosphorylated Tyr177 provides a docking site for Gab2 and GRB2 (7,8).
The fusion protein encoded by Bcr-Abl varies in size, depending on the breakpoint in the BCR gene. Three breakpoint cluster regions have been characterized to date: major (M-bcr), minor (m-bcr) and micro (mu-bcr). The overwhelming majority of CML patients have a p210 Bcr-Abl gene (M-bcr), whose mRNA transcripts have a b3a2 and/or a b2a2 junction. The smallest of the fusion proteins, p190 Bcr-Abl, (m-bcr breakpoint) is principally associated with Ph-positive ALL. Rare cases of CML are due to a p190-type of Bcr-Abl gene and in these, the disease tends to have a prominent monocytic component, resembling CMML. CML resulting from a p230 Bcr-Abl gene (mu-bcr breakpoint) is also rare, and has been associated with the CNL variant and/or with marked thrombocytosis. Exceptional CML cases have been described with Bcr breakpoints outside the three defined cluster regions, or with unusual breakpoints in Abl (9).

Background References

1. Groffen, J. et al. (1984) *Cell* 36, 93-99.
2. Maru, Y. et al. (1991) *Cell* 67, 459-468.
3. Che, W. et al. (2001) *Circulation* 104, 1399-1406.
4. Abe, J. I. et al. (2001) *Ann. N.Y. Acad. Sci.* 947, 341-343.
5. Voncken, J. W. et al. (1995) *Cell* 80, 719-728.
6. He, Y. et al. (2002) *Blood* 99, 2957-2968.
7. Sattler, M. et al. (2002) *Cancer Cell* 1, 479-492.
8. Warmuth, M. et al. (1995) *J. Biol. Chem.* 272, 33260-33270.
9. Melo, J.V. (1997) *Baillieres Clin. Haematol* 10, 203-22.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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