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ProductInformation

ANTI- c-CBL
Developed in Rabbit, IgG Fraction of Antiserum

Product Number **C9603**

Product Description

Anti- c-Cbl is developed in rabbit using a synthetic peptide corresponding to the C-terminal of human c-Cbl (amino acids 889-906), conjugated to KLH as immunogen. This sequence is identical in the corresponding mouse c-Cbl sequence, and is not found in v-Cbl and the c-Cbl homolog, Cbl-b. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti- c-Cbl specifically recognizes human c-Cbl (120 kDa). Applications include the detection and localization of c-Cbl by immunoblotting and immunoprecipitation. Additional bands (<120 kDa) representing c-Cbl degradation products may be observed by immunoblotting in some cell lines/extracts. Staining of c-Cbl in immunoblotting is specifically inhibited with c-Cbl immunizing peptide (human, amino acids 889-906).

c-Cbl (p120^{cbl}), the c-*cbl* proto-oncogene product, is a 120 kDa cytoplasmic protein involved in tyrosine kinase-dependent signaling pathways. c-Cbl was first identified as the cellular homolog of the murine Cas NS-1 leukemia retroviral oncogene v-*cbl*, which induces pre-B and B-myeloid leukemias.[1] v-Cbl represents a severely truncated form of the cellular homolog containing only the N-terminal 355 amino acid of c-Cbl, and localizes to both nuclear and cytoplasm.[2] c-Cbl is located in the cytoplasm and cytoskeleton, and is widely expressed in hematopoietic cell lines.[1,2] c-Cbl comprises an N-terminal transforming region (Cbl-N), which contains a phosphotyrosine binding domain, a RING zinc-finger domain adjacent to Cbl-N, and a large C-terminal region (Cbl-C) containing a large proline-rich region and a leucine zipper. The proline-rich region contains multiple potential tyrosine phosphorylation sites and docking sites for SH2 and SH3-containing proteins.[3] c-Cbl is one of the earliest targets of tyrosine phosphorylation in response to a number of cellular stimuli including T- and B-cell receptor activation.[4,5] In addition, stimulation of growth factor receptors by EGF, PDGF, NGF and FGF, results in c-Cbl tyrosine phosphorylation, in lymphoid and other cell lines.[6,7,8] Upon receptor activation, c-Cbl interacts with SH2 and SH3 domains of several cytoplasmic signaling proteins, including the tyrosine kinases Src, Fyn, Lck, Syk, and ZAP-70, the adaptor proteins Grb2, Nck, Shc, Crk-II and CrkL.[4,5,,9,10,11,12] In addition, c-Cbl can specifically associate with the p85β subunit of PI3-kinase.[5,10,11,13] In Bcr-Abl-transformed cells c-Cbl becomes phosphorylated by and specifically associates with Bcr-Abl, suggesting that it may be a downstream target of Bcr-Abl and v-Abl tyrosine kinases.[14]

Reagents

Anti-c-Cbl is supplied as an IgG fraction of antiserum in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A minimum working dilution of 1:5,000 is determined by immunoblotting using a whole extract of the human acute lymphoma Jurkat cell line.

A minimum working dilution of 1:1,000 is determined by immunoblotting using a whole extract of the human chronic myelogenous leukemia K562 cell line.

The antibody (10 µl) immunoprecipitates c-Cbl from a lysate of cultured A431 cells (200 µg).

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

1. Langdon, W.Y., et al., Proc. Natl. Acad. Sci. USA, **86**, 1168 (1989).
2. Blake, T.J., et al., EMBO J., **12**, 2017 (1993).
3. Blake, T.J., et al., Oncogene, **6**, 653 (1991).
4. Reedquist, K.A., et al., Proc. Natl. Acad. Sci. USA, **91**, 4135 (1994).
5. Panchamoorthy, G., et al., J. Biol. Chem., **271**, 3187 (1996).
6. Galisteo, M.L., et al., J. Biol. Chem., **270**, 20242 (1995).
7. Fukazawa, T., et al., J. Biol. Chem., **271**, 14554 (1996).
8. Meisner, H., et al., J. Biol. Chem., **270**, 25332 (1995).
9. Donovan, J.A., et al., J. Biol. Chem., **269**, 22921 (1994).
10. Fukazawa, T., et al., J. Biol. Chem., **270**, 19141 (1995).
11. Rivero-Lezcano, O.M., et al., J. Biol. Chem., **269**, 17363 (1994)
12. Reedquist, K.A., et al., J. Biol. Chem., **271**, 8435 (1996).
13. Soltoff, S.P., et al., J. Biol. Chem., **271**, 563 (1996).
14. Andoniou, C.E ., et al., EMBO J., **13**, 4515 (1994).

lpg 10/00