# **PRODUCT** INFORMATION



**CBL-B** Substrate-binding Domain (human, recombinant)

Item No. 41999

# **Overview and Properties**

Synonyms:	Casitas B-lineage Lymphoma Proto-oncogene B, Casitas B Lymphoma-B, RING Finger Protein 56, RING-type E3 Ubiquitin Transferase CBL-B, RNF56, SH3-binding Protein CBL-B, Signal Transduction Protein CBL-B, E3 Ubiquitin-protein Ligase CBL-B
Source:	Recombinant human N-terminal His-tagged CLB-B substrate-binding domain expressed
	in insect cells
Amino Acids:	39-426
Uniprot No.:	Q13191
Molecular Weight:	48.2 kDa
Storage:	-80°C (as supplied); avoid repeated freeze/thaw cycles
Stability:	≥1 year
Supplied in:	50 mM Tris-HCl (pH 7.5), with 200 mM sodium chloride, 20% glycerol, and 1 mM DTT
Protein	
Concentration:	<b>batch specific</b> mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



# Analytical SEC



# CAYMAN CHEMICAL

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WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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# Description

Casitas B-lineage lymphoma proto-oncogene B (CBL-B) is an E3 ubiquitin ligase and a member of CBL RING-type E3 ubiquitin ligases.<sup>1,2</sup> It is composed of an N-terminal tyrosine kinase-binding domain, a helix linker region, and a RING finger domain, which is necessary for CBL-B homodimerization and heterodimerization with the related homolog c-Cbl, and a C-terminal region containing proline- and tyrosine-rich motifs and a ubiquitin-association domain.<sup>2</sup> CBL-B is autoinhibited by its helix linker region but folds into the active conformation following tyrosine 371 phosphorylation by various kinases.<sup>3</sup> CBL-B is ubiquitously expressed but primarily found in leukocytes and is found in the cytoplasm.<sup>1</sup> It has roles in negatively regulating immune cell responses, preventing autoimmune activity, and promoting immune tolerance by targeting receptor and non-receptor tyrosine kinase signaling proteins for proteasomal degradation.<sup>1,4</sup> Knockout of *cblb* increases the percentage of natural killer (NK) cells expressing Ifn- $\gamma$ , as well as decreases tumor volume and number of total metastases, in a B16/F10 murine melanoma model of metastasis.<sup>4</sup> Knockout of Cblb increases serum IgG levels, as well as induces Cd28-independent lymphocyte hyperproliferation and B and T cell infiltration into the pancreas, salivary glands, and lungs, in mice.<sup>5</sup> CBL-B levels are decreased in T cell lymphocytes isolated from patients with systemic lupus erythematosus (SLE).<sup>6</sup> Cayman's CBL-B Substrate-binding Domain (human, recombinant) protein has a calculated molecular weight of 48.2 kDa.

### References

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- 3. Buetow, L., Tria, G., Ahmed, S.F., *et al.* Casitas B-lineage lymphoma linker helix mutations found in myeloproliferative neoplasms affect conformation. *BMC Biol.* **14(1)**, 76 (2016).
- Paolino, M., Choidas, A., Wallner, S., et al. The E3 ligase Cbl-b and TAM receptors regulate cancer metastasis via natural killer cells. Nature 507(7493), 508-512 (2014).
- 5. Bachmaier, K., Krawczyk, C., Kozieradzki, I., *et al.* Negative regulation of lymphocyte activation and autoimmunity by the molecular adaptor Cbl-b. *Nature* **403(6766)**, 211-216 (2000).
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