



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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# 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

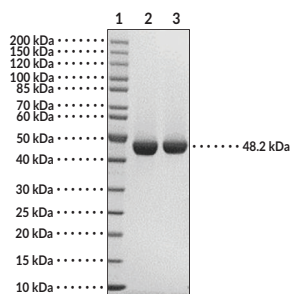
**Stability:** ≥1 year

**Supplied in:** 50 mM Tris-HCl (pH 7.5), with 200 mM sodium chloride, 20% glycerol, and 1 mM DTT

**Protein Concentration:** *batch specific* mg/ml

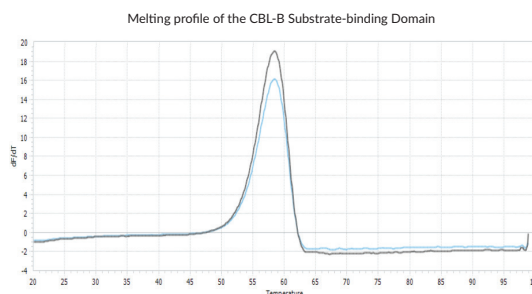
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images

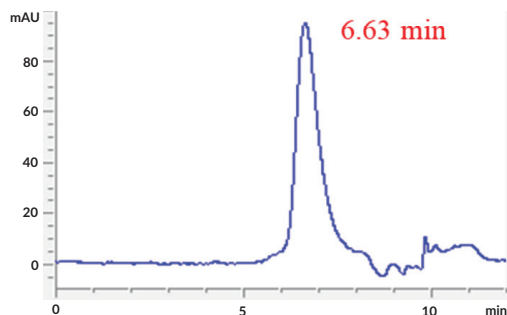


Lane 1: MW Markers  
Lane 2: CBL-B Substrate-binding Domain (2 µg, reduced)  
Lane 3: CBL-B Substrate-binding Domain (2 µg, non-reduced)

SDS-PAGE Analysis of CBL-B Substrate-binding Domain .  
This protein has a calculated molecular weight of 48.2 kDa.



### Analytical SEC



**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.

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# PRODUCT INFORMATION



## 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

1. Lutz-Nicoladoni, C., Wolf, D., and Sopper, S. Modulation of immune cell functions by the E3 ligase Cbl-b. *Front. Oncol.* **5**, 58 (2015).
2. Kimani, S.W., Perveen, S., Szezewzyk, M., et al. The co-crystal structure of Cbl-b and a small-molecule inhibitor reveals the mechanism of Cbl-b inhibition. *Commun. Biol.* **6**(1), 1272 (2023).
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).
4. 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).
6. Doníz-Padilla, L., Martínez-Jiménez, V., Niño-Moreno, P., et al. Expression and function of Cbl-b in T cells from patients with systemic lupus erythematosus, and detection of the 2126 A/G *Cblb* gene polymorphism in the Mexican mestizo population. *Lupus* **20**(6), 628-635 (2011).

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