

# PRODUCT INFORMATION



## CRBN/DDB1 Complex (human, recombinant)

Item No. 45180

### Overview and Properties

**Synonyms:** CRBN: Cereblon  
DDB1: Damage-specific DNA-binding Protein 1, DNA Damage-binding Protein 1, HBV X-associated Protein 1, UV-damaged DNA-binding Factor, UV-damaged DNA-binding Protein 1, UV-DDB1, XAP-1, Xeroderma Pigmentosum Group E-complementing Protein, XPE-BF, XPE-binding Factor

**Source:** Active recombinant human N-terminal His-AVI-tagged CRBN and DDB1 expressed in insect cells

**Amino Acids:** 1-442 (CRBN) (full length), 1-1,140 (DDB1) (full length)

**Uniprot Nos.:** Q96SW2/Q16531

**Molecular Weight:** 55.3 (CRBN) and 126.9 (DDB1) kDa

**Storage:** -80°C (as supplied)

**Stability:** ≥1 year

**Purity:** ≥90% estimated by SDS-PAGE

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

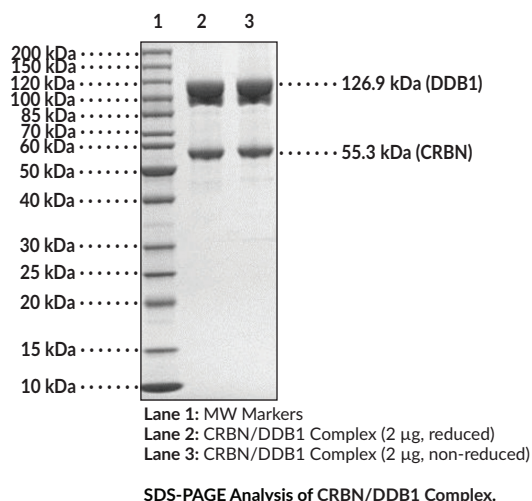
**Endotoxin Testing:** <1.0 EU/μg, determined by the LAL endotoxin assay

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

**Special Conditions:** Rapid thaw with running water.

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

### Image



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

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The cullin 4 RING ligase (CRL4) complex is an E3 ubiquitin ligase complex.<sup>1-3</sup> It is composed of the substrate receptor cereblon (CRBN), DNA damage-binding protein 1 (DDB1), cullin 4A or 4B, and RING box protein 1 (RBX1). CRBN interacts with DDB1 via its helical bundle between the Lon protease-like domain and thalidomide-binding domain. The CRL4 complex targets substrates for proteasomal degradation by ubiquitination and is involved in regulation of the cell cycle, embryogenesis, DNA repair, replication, transcription, and carcinogenesis.<sup>2</sup> Mutations in *CRBN* are associated with autosomal recessive non-syndromic intellectual disability, and *CRBN* is also the target of thalidomide-induced teratogenicity.<sup>2-4</sup> Mutations in *DDB1* are also associated with intellectual disability, as well as obesity, digital anomalies, hypotonia, and malformations.<sup>5</sup> Cayman's CRBN/DDB1 Complex (human, recombinant) protein can be used for enzyme activity assay and binding assay applications.

## References

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1. Petroski, M.D. and Deshaies, R.J. Function and regulation of cullin-RING ubiquitin ligases. *Nat. Rev. Mol. Cell Biol.* **6(1)**, 9-20 (2005).
2. Kim, H.K., Ko, T.H., Nyamaa, B., *et al.* Cereblon in health and disease. *Pflugers Arch.* **468(8)**, 1299-1309 (2016).
3. Kim, H.K., Seol, J.E., Ahn, S.W., *et al.* Cereblon: Promise and challenges for combating human diseases. *Pflugers Arch.* **473(11)**, 1695-1711 (2021).
4. Ito, T., Ando, H., Suzuki, T., *et al.* Identification of a primary target of thalidomide teratogenicity. *Science* **327(5971)**, 1345-1350 (2010).
5. White, S.M., Bhoj, E., Nellåker, C., *et al.* A DNA repair disorder caused by *de novo* monoallelic *DDB1* variants is associated with a neurodevelopmental syndrome. *Am. J. Hum. Genet.* **108(4)**, 749-756 (2021).

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