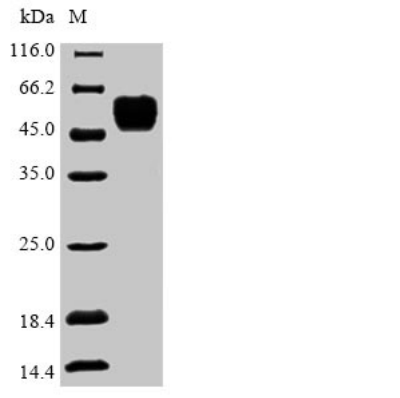
Recombinant Human COP9 signalosome complex subunit 2 (COPS2)

Product Code	CSB-YP753713HU
Relevance	Essential component of the COP9 signalosome complex (CSN), a complex involved in various cellular and developmental processes. The CSN complex is an essential regulator of the ubiquitin (Ubl) conjugation pathway by mediating the deneddylation of the cullin subunits of SCF-type E3 ligase complexes, leading to decrease the Ubl ligase activity of SCF-type complexes such as SCF, CSA or DDB2. The complex is also involved in phosphorylation of p53/TP53, c-jun/JUN, IkappaBalpha/NFKBIA, ITPK1 and IRF8/ICSBP, possibly via its association with CK2 and PKD kinases. CSN-dependent phosphorylation of TP53 and JUN promotes and protects degradation by the Ubl system, respectively. Involved in early stage of neuronal differentiation via its interaction with NIF3L1.
Abbreviation	Recombinant Human COPS2 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P61201
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MSDMEDDFMCDDEEDYDLEYSEDSNSEPNVDLENQYYNSKALKEDDPKAAL SSFQKVLELEGEKGEWGFKALKQMIKINFKLTNFPEMMNRYKQLLTYIRSAVTR NYSEKSINSILDYISTSKQMDLLQEFYETTLEALKDAKNDRLWFKTNTKLGKLYL EREEYGKLQKILRQLHQSCQTDDGEDDLKKGTQLLEIYALEIQMYTAQKNNKK LKALYEQSLHIKSAIPHPLIMGVIRECGGKMHLREGEFEKAHTDFFEAFKNYDE SGSPRRTTCLKYLVLANMLMKSGINPFDSQEAKPYKNDPEILAMTNLVSAYQN NDITEFEKILKTNHSNIMDDPFIREHIEELLRNIRTQVLIKLIKPYTRIHIPFISKELNI DVADVESLLVQCILDNTIHGRIDQVNQLLELDHQKRGGARYTALDKWTNQLNS LNQAVVSKLA
Research Area	Signal Transduction
Source	Yeast
Target Names	COPS2
Protein Names	Alien homolog JAB1-containing signalosome subunit 2 Thyroid receptor-interacting protein 15
Expression Region	1-443aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at

	4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	53.6kDa
Protein Length	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human COP9 signalosome complex subunit 2 (COPS2) comes from a yeast expression system and spans the complete 443 amino acid protein. The construct includes an N-terminal 6xHis-tag for easier purification and detection. SDS-PAGE analysis shows this product reaches purity levels above 85%. It's intended solely for research purposes and appears to offer a dependable resource for studying protein-protein interactions and related investigations.

COPS2 belongs to the COP9 signalosome, a multi-protein assembly that participates in diverse cellular processes—protein degradation and signal transduction among them. The protein seems to play an important role in controlling the ubiquitin-proteasome pathway, which likely contributes to how cells manage protein stability and activity. Getting a handle on COPS2's function may be key to understanding cellular regulation and homeostasis mechanisms.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Protein-Protein Interaction Studies Using His-Tag Pull-Down Assays

Researchers can attach the N-terminal 6xHis-tagged COPS2 protein to nickel-affinity resins. This setup helps identify and characterize binding partners within the COP9 signalosome complex or other cellular networks. The approach allows systematic screening of potential interacting proteins from cell lysates or purified protein collections. Since this recombinant protein covers the full sequence (1-443aa), all possible binding domains should remain intact for interaction

studies. Mass spectrometry analysis of the pulled-down complexes might reveal insights into how COPS2 functions within protein networks and signaling cascades.

2. Antibody Development and Validation

This recombinant COPS2 protein works well as an antigen for creating specific antibodies against human COPS2 in research settings. The full-length protein offers multiple epitopes for both monoclonal and polyclonal antibody production, which may increase the chances of getting high-affinity, specific antibodies. The 85% purity appears adequate for immunization protocols and follow-up antibody characterization through ELISA, Western blotting, and specificity testing. Researchers can then use these antibodies to detect native COPS2 across different cell types and tissues.

3. Biochemical Characterization and Stability Studies

The purified recombinant COPS2 protein enables investigation of its biochemical properties—thermal stability, pH tolerance, and buffer compatibility under different experimental conditions. Techniques like dynamic light scattering, differential scanning fluorimetry, and size exclusion chromatography could provide useful data about protein folding, aggregation patterns, and optimal storage conditions. These studies seem essential for developing standardized protocols for COPS2 handling in lab settings and understanding what structural requirements keep the protein intact.

4. In Vitro Reconstitution Experiments for COP9 Signalosome Complex Assembly

This full-length COPS2 protein can be mixed with other recombinant COP9 signalosome subunits to examine complex assembly mechanisms and subunit interactions under controlled in vitro conditions. The yeast expression system likely produces properly folded protein that retains native-like structural features needed for complex formation. Such reconstitution studies might reveal the step-by-step assembly process, pinpoint critical binding interfaces, and determine the minimum subunit requirements for stable complex formation.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.