SANTA CRUZ BIOTECHNOLOGY, INC.

26S Proteasome α (IIG7): sc-65755

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The 26S Proteasome is a large complex involved in the intracellular degradation of proteins in eukaryotes. Ubiquitination by E3 ubiquitin ligases targets proteins for degradation by this complex. The 26S Proteasome plays an important role in the regulation of many biological processes. It is composed of over 30 different subunits and contains at least 2 copies of each subunit. Assembly of this large complex is ATP-dependent. Due to its size it is fairly unstable and often disassociates into subcomplexes (including a 20S core and two 19S regulatory complexes). The α subunit is a subunit of the 20S catalytic core. The 20S core consists of four stacked rings arranged in a cylinder that are seven subunits each (two stacks are composed of α subunits 1-7 and two are composed of β subunits 1-7). The α subunits make up the outer rings that restrict access into the chamber. They also form the framework for β subunit assembly.

SOURCE

26S Proteasome α (IIG7) is a mouse monoclonal antibody raised against 26S Proteasome purified from embryos of *Drosophila melanogaster* origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

26S Proteasome α (IIG7) is available conjugated to agarose (sc-65755 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-65755 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-65755 PE), fluorescein (sc-65755 FITC), Alexa Fluor® 488 (sc-65755 AF488), Alexa Fluor® 546 (sc-65755 AF546), Alexa Fluor® 594 (sc-65755 AF594) or Alexa Fluor® 647 (sc-65755 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-65755 AF680) or Alexa Fluor® 790 (sc-65755 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

26S Proteasome α (IIG7) is recommended for detection of α subunit of the 20S catalytic core of the 26S Proteasome of *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of 26S Proteasome α: 21 kDa.

Positive Controls: *Drosophila* embryonic protein tissue extract.

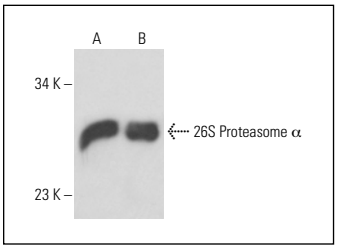
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



26S Proteasome α (IIG7): sc-65755. Western blot analysis of 26S Proteasome α expression in *Drosophila* embryonic protein tissue extract (**A**) and purified 26S Proteasome (**B**).

SELECT PRODUCT CITATIONS

1. Tsakiri, E.N., et al. 2013. Differential regulation of proteasome functionality in reproductive vs. somatic tissues of *Drosophila* during aging or oxidative stress. FASEB J. 27: 2407-2420.
2. Sap, K.A., et al. 2017. Quantitative proteomics reveals extensive changes in the ubiquitinome after perturbation of the proteasome by targeted dsRNA-mediated subunit knockdown in *Drosophila*. J. Proteome Res. 16: 2848-2862.
3. Pomatto, L.C.D., et al. 2017. Sexual dimorphism in oxidant-induced adaptive homeostasis in multiple wild-type *D. melanogaster* strains. Arch. Biochem. Biophys. 636: 57-70.
4. Blount, J.R., et al. 2018. Expression and regulation of deubiquitinase-resistant, unanchored ubiquitin chains in *Drosophila*. Sci. Rep. 8: 8513.
5. Pomatto, L.C.D., et al. 2018. Sex-specific adaptive homeostasis in *D. melanogaster* depends on increased proteolysis by the 20S Proteasome: data-in-brief. Data Brief 17: 653-661.
6. Tsakiri, E.N., et al. 2019. Proteasome dysfunction induces excessive proteome instability and loss of mitostasis that can be mitigated by enhancing mitochondrial fusion or autophagy. Autophagy 15: 1757-1773.
7. Nikou, T., et al. 2019. Comparison survey of EVOO polyphenols and exploration of healthy aging-promoting properties of oleocanthal and oleacein. Food Chem. Toxicol. 125: 403-412.
8. Pomatto, L.C., et al. 2020. The proteasome β 5 subunit is essential for sexually divergent adaptive homeostatic responses to oxidative stress in *D. melanogaster*. Free Radic. Biol. Med. 160: 67-77.
9. Li, B., et al. 2021. Yuan-zhi-san inhibits tau protein aggregation in an $A\beta_{1-40}$-induced Alzheimer's disease rat model via the ubiquitin-proteasome system. Mol. Med. Rep. 23: 1.

RESEARCH USE

For research use only, not for use in diagnostic procedures.