SANTA CRUZ BIOTECHNOLOGY, INC.

α/β centractin (E-5): sc-390632

BACKGROUND

The dynactin complex is a macromolecular complex that consists of 10-11 distinct subunits. This complex is critical for the function of dynein, a molecular motor protein. Dynactin plays a role in ER to Golgi transport, spindle formation, chromosome movement, axon guidance, nuclear positioning and the centripetal movement of lysosomes and endosomes. Centractin is a subunit of the dynactin complex that exists in multiple isoforms. The α isoform, also known as Actin-related protein 1 homolog A (Arp1) and previously referred to as centractin, is the most abundant isoform in the dynactin complex. The β isoform, also known as Actin-related protein 1 homolog B, shares 90% identity with the α isoform. The two isoforms, α and β, are expressed at a ratio of 15:1 respectively. The backbone filament structure of the dynactin complex (important for the arrangement of other complex proteins) is composed of 9-11 subunits of α/β-centractin.

REFERENCES

1. Clark, S.W., et al. 1995. β-centractin: characterization and distribution of a new member of the centractin family of Actin-related proteins. Mol. Biol. Cell 5: 1301-1310.
2. Elsea, S.H., et al. 1999. Assignment of β centractin (CTRN2) to human chromosome 2 bands q11.1→q11.2 with somatic cell hybrids and *in situ* hybridization. Cytogenet. Cell Genet. 84: 48-49.
3. Bingham, J.B. and Schroer, T.A. 1999. Self-regulated polymerization of the Actin-related protein Arp1. Curr. Biol. 9: 223-226.
4. Eaton, B.A., et al. 2002. Dynactin is necessary for synapse stabilization. Neuron 34: 729-741.
5. Cuadrado-Tejedor, M., et al. 2005. Changes in cytoskeletal gene expression linked to MPTP-treatment in mice. Neurobiol. Dis. 20: 666-672.

CHROMOSOMAL LOCATION

Genetic locus: ACTR1A (human) mapping to 10q24.32, ACTR1B (human) mapping to 2q11.2; Actr1a (mouse) mapping to 19 C3, Actr1b (mouse) mapping to 1 B.

SOURCE

α/β centractin (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 218-241 within an internal region of α/β centractin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-390632 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-390632 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

α/β centractin (E-5) is recommended for detection of α-centractin and β-centractin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

α/β centractin (E-5) is also recommended for detection of α-centractin and β-centractin in additional species, including equine, canine, bovine, porcine and avian.

α/β centractin (E-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of α centractin: 43 kDa.

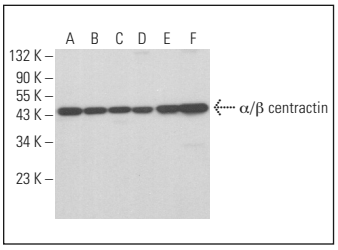
Molecular Weight of β centractin: 42 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, EOC 20 whole cell lysate: sc-364187 or HEK293 whole cell lysate: sc-45136.

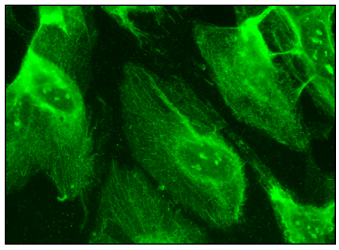
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



α/β centractin (E-5): sc-390632. Western blot analysis of α/β centractin expression in HEK293 (**A**), HeLa (**B**), HOS (**C**), F9 (**D**), EOC 20 (**E**) and C2C12 (**F**) whole cell lysates.



α/β centractin (E-5): sc-390632. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

1. Wang, F.X., et al. 2013. A novel protein from *Eupolyphaga sinensis* inhibits adhesion, migration, and invasion of human lung cancer A549 cells. Biochem. Cell Biol. 91: 244-251.

STORAGE

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