

# $\alpha/\beta$ -centractin (A-7): sc-376010

## 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  $\alpha$  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  $\beta$  isoform, also known as Actin-related protein 1 homolog B, shares 90% identity with the  $\alpha$  isoform. The two isoforms,  $\alpha$  and  $\beta$ , 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  $\alpha/\beta$ -centractin.

## REFERENCES

- Clark, S.W., et al. 1994.  $\beta$ -centractin: characterization and distribution of a new member of the centractin family of Actin-related proteins. *Mol. Biol. Cell* 5: 1301-1310.
- Elsa, S.H., et al. 1999. Assignment of  $\beta$ -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.
- Bingham, J.B., et al. 1999. Self-regulated polymerization of the Actin-related protein Arp1. *Curr. Biol.* 9: 223-226.
- Eaton, B.A., et al. 2002. Dynactin is necessary for synapse stabilization. *Neuron* 34: 729-741.

## 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

$\alpha/\beta$ -centractin (A-7) is a mouse monoclonal antibody raised against amino acids 77-376 mapping at the C-terminus of  $\alpha$ -centractin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\alpha/\beta$ -centractin (A-7) is available conjugated to agarose (sc-376010 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376010 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376010 PE), fluorescein (sc-376010 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376010 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376010 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376010 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376010 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376010 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376010 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

$\alpha/\beta$ -centractin (A-7) is recommended for detection of  $\alpha$ -centractin and  $\beta$ -centractin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

$\alpha/\beta$ -centractin (A-7) is also recommended for detection of  $\alpha$ -centractin and  $\beta$ -centractin in additional species, including equine, canine, bovine and porcine.

Molecular Weight of  $\alpha$ -centractin: 43 kDa.

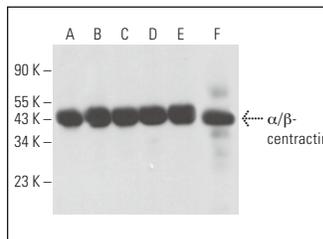
Molecular Weight of  $\beta$ -centractin: 42 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, KNRK whole cell lysate: sc-2214 or Neuro-2A whole cell lysate: sc-364185.

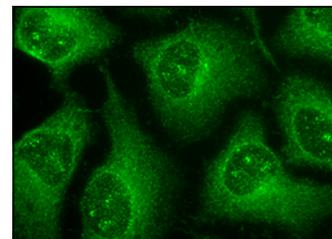
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



$\alpha/\beta$ -centractin (A-7): sc-376010. Western blot analysis of  $\alpha/\beta$ -centractin expression in Caki-1 (A), KNRK (B), AMJ2-C8 (C), Neuro-2A (D) and EOC 20 (E) whole cell lysates and human heart tissue extract (F).



$\alpha/\beta$ -centractin (A-7): sc-376010. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.