

# $\beta$ -Adaptin (A-5): sc-74423



The Power to Question

## BACKGROUND

Clathrin-coated pits and vesicles are assembled for receptor-mediated endocytosis through interaction with clathrin associated protein complexes. Vesicle transport is mediated from the *trans*-Golgi network by the adapter complex AP-1 and from the plasma membrane by the AP-2 complex. The AP-1 and AP-2 adapter protein complexes consist of clathrin binding Adaptin proteins ( $\gamma$  and  $\beta$ 1 for AP-1,  $\alpha$  and  $\beta$ 2 for AP-2) and two smaller subunits known as AP50 and AP17. The  $\alpha$ - and  $\beta$ -Adaptin chains have a similar two-domain organization with C-terminal domains that vary in both sequence and length.  $\alpha$ -Adaptin splice variants A and C display variable relative expression levels and differential distribution in different tissues. AP180 (also designated AP-3 or F1-20) is a synapse-specific clathrin assembly protein. The protein CALM (clathrin assembly protein lymphoid myeloid leukemia) is highly homologous to AP180 and may also be involved in clathrin assembly.

## REFERENCES

- Kirchhausen, T., et al. 1989. Structural and functional division into two domains of the large (100 to 115 kDa) chains of the clathrin-associated protein complex AP-2. *Proc. Natl. Acad. Sci. USA* 86: 2612-2616.
- Robinson, M.S. 1989. Cloning of cDNAs encoding two related 100 kDa coated vesicle proteins ( $\alpha$ -Adaptins). *J. Cell Biol.* 108: 833-842.
- Robinson, M.S. 1990. Cloning and expression of  $\gamma$ -Adaptin, a component of clathrin-coated vesicles associated with the Golgi apparatus. *J. Cell Biol.* 111: 2319-2326.
- Ponnambalam, S., et al. 1990. Conservation and diversity in families of coated vesicle Adaptins. *J. Biol. Chem.* 265: 4814-4820.

## CHROMOSOMAL LOCATION

Genetic locus: AP1B1 (human) mapping to 22q12.2, AP2B1 (human) mapping to 17q12; Ap1b1 (mouse) mapping to 11 A1, Ap2b1 (mouse) mapping to 11 C.

## SOURCE

$\beta$ -Adaptin (A-5) is a mouse monoclonal antibody raised against amino acids 650-949 of  $\beta$ 1-Adaptin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\beta$ -Adaptin (A-5) is available conjugated to agarose (sc-74423 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74423 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74423 PE), fluorescein (sc-74423 FITC), Alexa Fluor® 488 (sc-74423 AF488), Alexa Fluor® 546 (sc-74423 AF546), Alexa Fluor® 594 (sc-74423 AF594) or Alexa Fluor® 647 (sc-74423 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74423 AF680) or Alexa Fluor® 790 (sc-74423 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## STORAGE

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

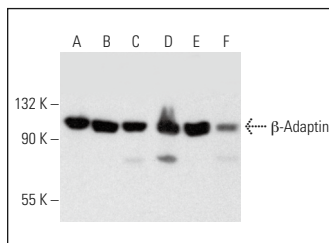
## APPLICATIONS

$\beta$ -Adaptin (A-5) is recommended for detection of  $\beta$ 1-Adaptin and  $\beta$ 2-Adaptin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

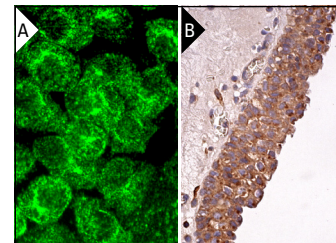
Molecular Weight of  $\beta$ -Adaptin: 106 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

## DATA



$\beta$ -Adaptin (A-5): sc-74423. Western blot analysis of  $\beta$ -Adaptin expression in HeLa (A), K-562 (B), Jurkat (C), C3H/10T1/2 (D), NIH/3T3 (E) and C6 (F) whole cell lysates.



$\beta$ -Adaptin (A-5): sc-74423. Immunofluorescence staining of formalin-fixed A-431 cells showing Golgi apparatus and cytoplasmic vesicles localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (B).

## SELECT PRODUCT CITATIONS

- Barbera, S., et al. 2019. The small GTPase Rab5c is a key regulator of trafficking of the CD93/Multimerin-2/ $\beta$ 1 Integrin complex in endothelial cell adhesion and migration. *Cell Commun. Signal.* 17: 55.
- Wang, X., et al. 2022. NRF1-mediated microglial activation triggers high-altitude cerebral edema. *J. Mol. Cell Biol.* 14: mjac036.
- Basukala, O., et al. 2022. HPV-16 E7 interacts with the endocytic machinery via the AP2 adaptor  $\mu$ 2 subunit. *mBio* 13: e0230222.
- Dong, X., et al. 2024. Regulated secretion of mutant p53 negatively affects T lymphocytes in the tumor microenvironment. *Oncogene* 43: 92-105.

## RESEARCH USE

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

## PROTOCOLS

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