

# ACD (AA-2): sc-100597

## BACKGROUND

ACD (adrenocortical dysplasia homolog), also known as PIP1, PTOP, TPP1 or TINT1 is a 544 amino acid human homolog of the mouse Acd protein and is one of six components in the telosome/shelterin complex; a complex involved in shaping and guarding telomeres. ACD is essential for the proper assembly and stabilization of the telomere-associated complex and is able to interact directly with POT1 (protection of telomeres 1) and TRF1 (telomeric repeat binding factor 1), two additional members of the multi-protein complex. Localized to the nucleus, ACD helps to control telomere length and elongation by mediating telomerase activity and telomerase access to DNA. Through its ability to control and maintain telomere growth, ACD is thought to be involved in organogenesis. Two isoforms of ACD are expressed due to alternative splicing events.

## REFERENCES

1. Ye, J.Z., et al. 2004. POT1-interacting protein PIP1: a telomere length regulator that recruits POT1 to the TIN2/TRF1 complex. *Genes Dev.* 18: 1649-1654.
2. Liu, D., et al. 2004. PTOP interacts with POT1 and regulates its localization to telomeres. *Nat. Cell Biol.* 6: 673-680.
3. de Lange, T. 2005. Shelterin: the protein complex that shapes and safeguards human telomeres. *Genes Dev.* 19: 2100-2110.
4. O'Connor, M.S., et al. 2006. A critical role for TPP1 and TIN2 interaction in high-order telomeric complex assembly. *Proc. Natl. Acad. Sci. USA* 103: 11874-11879.
5. Hockemeyer, D., et al. 2007. Telomere protection by mammalian POT1 requires interaction with TPP1. *Nat. Struct. Mol. Biol.* 14: 754-761.
6. Cristofari, G., et al. 2007. Telomerase unplugged. *ACS Chem. Biol.* 2: 155-158.
7. Wang, F., et al. 2007. The POT1-TPP1 telomere complex is a telomerase processivity factor. *Nature* 445: 506-510.
8. Xin, H., et al. 2007. TPP1 is a homologue of ciliate TEBP- $\beta$  and interacts with POT1 to recruit telomerase. *Nature* 445: 559-562.

## CHROMOSOMAL LOCATION

Genetic locus: ACD (human) mapping to 16q22.1.

## SOURCE

ACD (AA-2) is a mouse monoclonal antibody raised against recombinant ACD of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

ACD (AA-2) is recommended for detection of ACD of 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).

Suitable for use as control antibody for ACD siRNA (h): sc-93019, ACD shRNA Plasmid (h): sc-93019-SH and ACD shRNA (h) Lentiviral Particles: sc-93019-V.

Molecular Weight of ACD human isoforms 1/2: 58/57 kDa.

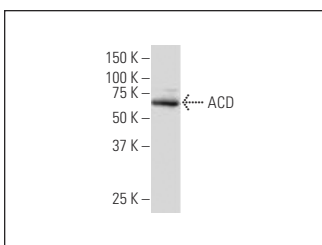
Molecular Weight of ACD mouse isoforms 1/2/3/4/5: 45/34/24/18/8 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

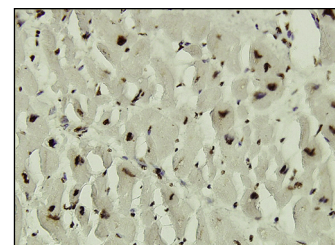
## RECOMMENDED SUPPORT REAGENTS

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™ 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ACD (AA-2): sc-100597. Western blot analysis of ACD expression in IMR-32 whole cell lysate.



ACD (AA-2): sc-100597. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human heart tissue showing nuclear localization.

## SELECT PRODUCT CITATIONS

1. Hsu, R.Y.C., et al. 2020. ORCA/LRWD1 regulates homologous recombination at ALT-telomeres by modulating heterochromatin organization. *iScience* 23: 101038.

## RESEARCH USE

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