

PLIC-2 (QR-2): sc-100612

BACKGROUND

Proteins linking integrin-associated protein with cytoskeleton (PLICs) provide a signaling connection between the membrane receptors for Thrombospondin and the cytoskeleton. The PLIC proteins are part of ubiquitin-like proteins, all of which contain an ubiquitin-like domain. Both PLIC-1 and PLIC-2, known also as ubiquilin 1 and ubiquilin 2, associate with proteasomes and two different E3 ubiquitin ligase enzymes. These associations suggest that PLIC-1 and PLIC-2 may link ubiquitination machinery and proteasomes for *in vivo* protein degradation. PLIC-1 and PLIC-2 both bind to a short peptide within the ATPase domain of the HSP 70-like STCH protein. PLIC-1 is a cytoplasmic protein that associates with the DAN gene product and may play a critical role in cell cycle regulation. It also interacts with two proteins linked to early-onset Alzheimer's disease, Presenilin 1 and Presenilin 2, and promotes accumulation of the presenilin proteins. PLIC-1 is abundant in neurons of healthy brain, neurofibrillary tangles in Alzheimer's-diseased brain and Lewy bodies of Parkinson-diseased brain.

REFERENCES

1. Ozaki, T., et al. 1997. Identification of a new cellular protein that can interact specifically with DAN. *DNA Cell Biol.* 16: 985-991.
2. Wu, A.L., et al. 1999. Ubiquitin-related proteins regulate interaction of Vimentin intermediate filaments with the plasma membrane. *Mol. Cell* 4: 619-625.
3. Kleijnen, et al. 2000. The hPLIC proteins may provide a link between the ubiquitination machinery and the proteasome. *Mol. Cell* 6: 409-419.
4. Kaye, F.J., et al. 2000. A family of ubiquitin-like proteins binds the ATPase domain of HSP 70-like STCH. *FEBS Lett.* 467: 348-355.
5. Mah, A.L., et al. 2000. Identification of ubiquilin, a novel presenilin interactor that increases presenilin protein accumulation. *J. Cell Biol.* 151: 847-862.
6. Hanaoka, E., et al. 2000. Molecular cloning and expression analysis of the human DA41 gene and its mapping to chromosome 9q21.2-q21.3. *J. Hum. Genet.* 45: 188-191.

CHROMOSOMAL LOCATION

Genetic locus: UBQLN2 (human) mapping to Xp11.1; Ubqln2 (mouse) mapping to X F3.

SOURCE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} 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

PLIC-2 (QR-2) is recommended for detection of PLIC-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for PLIC-2 siRNA (h): sc-41671, PLIC-2 siRNA (m): sc-41672, PLIC-2 shRNA Plasmid (h): sc-41671-SH, PLIC-2 shRNA Plasmid (m): sc-41672-SH, PLIC-2 shRNA (h) Lentiviral Particles: sc-41671-V and PLIC-2 shRNA (m) Lentiviral Particles: sc-41672-V.

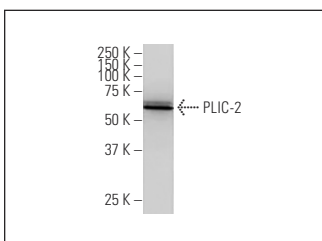
Molecular Weight of PLIC-2: 66 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

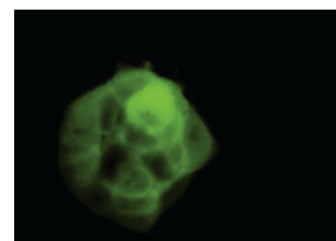
RECOMMENDED SUPPORT REAGENTS

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



PLIC-2 (QR-2): sc-100612. Western blot analysis of PLIC-2 expression in A-431 whole cell lysate.



PLIC-2 (QR-2): sc-100612. Immunofluorescence staining of paraformaldehyde-fixed A-431 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Scotter, E.L., et al. 2014. Differential roles of the ubiquitin proteasome system and autophagy in the clearance of soluble and aggregated TDP-43 species. *J. Cell Sci.* 127: 1263-1278.
2. Scotter, E.L., et al. 2017. C9ORF72 and UBQLN2 mutations are causes of amyotrophic lateral sclerosis in New Zealand: a genetic and pathologic study using banked human brain tissue. *Neurobiol. Aging* 49: 214.e1-214.e5.

RESEARCH USE

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