

# 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 Xp11.21; 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<sub>2a</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

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.

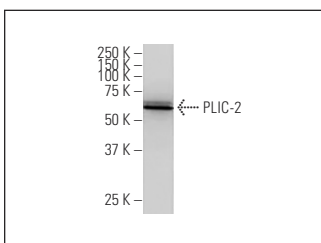
Molecular Weight of PLIC-2: 66 kDa.

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

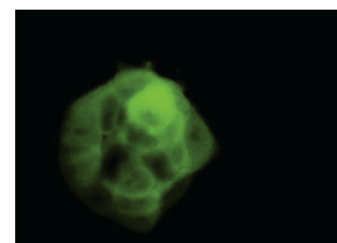
## RECOMMENDED SUPPORT REAGENTS

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.