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# Ubiquilin1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2176c

## Product Information

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| **Application** | IHC-P, WB, IF, E |
| **Primary Accession** | Q9UMX0 |
| **Other Accession** | Q9QZM0, Q9UHD9, Q9JJP9, Q8R317, Q8IXS9 |
| **Reactivity** | Human, Rat, Mouse |
| **Predicted** | Rat, Bovine, Canine, Rabbit, Chicken |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Calculated MW** | 62519 |
| **Antigen Region** | 296-326 |

## Additional Information

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| **Gene ID** | 29979 |
| **Other Names** | Ubiquilin-1, Protein linking IAP with cytoskeleton 1, PLIC-1, hPLIC-1, UBQLN1, DA41, PLIC1 |
| **Target/Specificity** | This Ubiquilin1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 296-326 amino acids from the Central region of human Ubiquilin1. |
| **Dilution** | IHC-P~~1:100~500 WB~~1:1000 IF~~1:100 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | Ubiquilin1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | UBQLN1 |
| **Synonyms** | DA41, PLIC1 |

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| **Function** | Plays an important role in the regulation of different protein degradation mechanisms and pathways including ubiquitin- proteasome system (UPS), autophagy and endoplasmic reticulum-associated protein degradation (ERAD) pathway. Mediates the proteasomal targeting of misfolded or accumulated proteins for degradation by binding (via UBA domain) to their polyubiquitin chains and by interacting (via ubiquitin-like domain) with the subunits of the proteasome (PubMed:15147878). Plays a role in the ERAD pathway via its interaction with ER-localized proteins UBXN4, VCP and HERPUD1 and may form a link between the polyubiquitinated ERAD substrates and the proteasome (PubMed:18307982, PubMed:19822669). Involved in the regulation of macroautophagy and autophagosome formation; required for maturation of autophagy-related protein LC3 from the cytosolic form LC3-I to the membrane-bound form LC3-II and may assist in the maturation of autophagosomes to autolysosomes by mediating autophagosome-lysosome fusion (PubMed:19148225, PubMed:20529957, PubMed:23459205). Negatively regulates the TICAM1/TRIF-dependent toll-like receptor signaling pathway by decreasing the abundance of TICAM1 via the autophagic pathway (PubMed:21695056). Promotes the ubiquitination and lysosomal degradation of ORAI1, consequently down-regulating the ORAI1-mediated Ca2+ mobilization (PubMed:23307288). Suppresses the maturation and proteasomal degradation of amyloid beta A4 protein (A4) by stimulating the lysine 63 (K63)-linked polyubiquitination. Delays the maturation of A4 by sequestering it in the Golgi apparatus and preventing its transport to the cell surface for subsequent processing (By similarity). Ubiquitinates BCL2L10 and thereby stabilizes protein abundance (PubMed:22233804). |
| **Cellular Location** | Cytoplasm. Nucleus Endoplasmic reticulum. Cytoplasmic vesicle, autophagosome. Cell membrane Note=Detected in neuronal processes and at synapses (By similarity) Recruited to the ER during ER-associated protein degradation (ERAD) (PubMed:19822669). Isoform 1 and isoform 3 colocalize with PSEN1 in the cell membrane and in cytoplasmic juxtanuclear structures called aggresomes (PubMed:21143716). Colocalizes with ORAI1 and TICAM1 in the autophagosome (PubMed:21695056, PubMed:23307288). Colocalizes with EPS15 and HGS in ubiquitin-rich cytoplasmic aggregates that are not endocytic compartments and with EPS15 also in aggresomes (PubMed:16159959). {ECO:0000250\|UniProtKB:Q9JJP9, ECO:0000269\|PubMed:16159959, ECO:0000269\|PubMed:19822669, ECO:0000269\|PubMed:21143716, ECO:0000269\|PubMed:21695056, ECO:0000269\|PubMed:23307288} |
| **Tissue Location** | Brain (at protein level) (PubMed:18953672). Ubiquitous. Highly expressed throughout the brain; detected in neurons and in neuropathological lesions, such as neurofibrillary tangles and Lewy bodies. Highly expressed in heart, placenta, pancreas, lung, liver, skeletal muscle and kidney. |

## Background

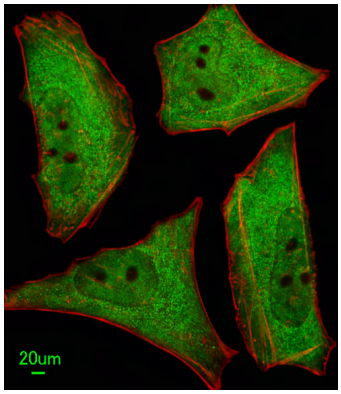
Ubiquilin 1 (UBQLN1), also known as DA41, was isolated from an adult rat lung cDNA library, and encodes a cellular protein that associates with DAN.1 DAN expression is reduced in rat fibroblast 3Y1 cells transformed with mouse sarcoma virus and in rodent fibroblasts transformed with a variety of oncogenes. The DAN-DA41 interaction is mediated through the N-terminal domain and a cysteine-knot region of DAN. Human DA41 encodes a 589-amino acid protein with 86% amino acid sequence identity with rat protein.2 DA41 expression is regulated in a cell cycle-dependent manner. PLIC1 and PLIC2 (UBQLN2) are homologs of the mouse Plics (proteins linking integrin-associated protein (IAP) and cytoskeleton) and the yeast Dsk2 protein. PLIC1, also called UBQLN1, shares 72% amino acid identity with PLIC2,3 Two motifs are conserved in the mammalian PLICs and yeast Dsk2, an N-terminal ubiquitin-like (UBL) domain and a C-terminal ubiquitin-associated (UBA) domain. Unlike ubiquitin, the UBL domain of the PLICs does not have a diglycine motif in its C terminus. The UBA domain is present in multiple enzyme classes of the ubiquitination machinery. Human PLICs associate with both proteasomes and ubiquitin ligases in large complexes.

Overexpression of PLICs impairs the in vivo degradation of 2 unrelated ubiquitin-dependent proteasome substrates, p53 and I-kappa-B-alpha (NFKBIA), but not a ubiquitin-independent substrate. PLICs may link the ubiquitination machinery to the proteasome to affect in vivo protein degradation. The DA41 gene maps to chromosome 9q21.2-q21.3, a position overlapping a candidate tumor suppressor locus for bladder cancer.2

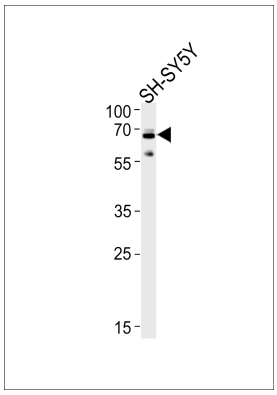
## References

Massey, L.K., et al., J. Alzheimers Dis. 6(1):79-92 (2004). Gao, L., et al., J. Virol. 77(7):4149-4159 (2003). Mah, A.L., et al., J. Cell Biol. 151(4):847-862 (2000). Kleijnen, M.F., et al., Mol. Cell 6(2):409-419 (2000). Hanaoka, E., et al., J. Hum. Genet. 45(3):188-191 (2000).

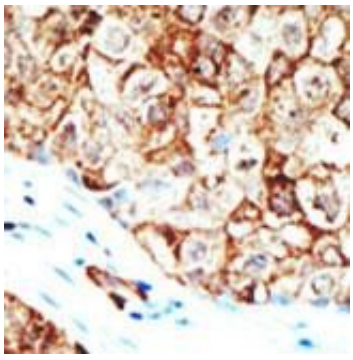
## Images




Immunofluorescent analysis of Hela cells, using Ubiquilin1 Antibody (Center) (Cat. #AP2176c). AP2176c was diluted at 1:100 dilution. Alexa Fluor 488-conjugated goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody (green). Cytoplasmic actin was counterstained with Dylight Fluor® 554 (red) conjugated Phalloidin (red).




Ubiquilin1 Antibody (P311) (Cat. #AP2176c) western blot analysis in SH-SY5Y cell line lysates (35ug/lane).This demonstrates the Ubiquilin1 antibody detected the Ubiquilin1 protein (arrow).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

## Citations

- APP modulates KCC2 expression and function in hippocampal GABAergic inhibition.
- UBQLN1 interacts with SPEM1 and participates in spermiogenesis.
- Tau pathology in frontotemporal lobar degeneration with C9ORF72 hexanucleotide repeat expansion.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.