

**AMBRA1 Polyclonal Antibody**  
Catalog # AP73945**Specification****AMBRA1 Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">O9C0C7</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal

**AMBRA1 Polyclonal Antibody - Additional Information**

Gene ID 55626

**Other Names**

autophagy/beclin-1 regulator 1

**Dilution**

WB~~WB 1:500-2000, ELISA 1:10000-20000

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**AMBRA1 Polyclonal Antibody - Protein Information**

Name AMBRA1 {ECO:0000303|PubMed:17589504, ECO:0000312|HGNC:HGNC:25990}

**Function**

Substrate-recognition component of a DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complex involved in cell cycle control and autophagy (PubMed:<a href="http://www.uniprot.org/citations/20921139" target="\_blank">20921139</a>, PubMed:<a href="http://www.uniprot.org/citations/23524951" target="\_blank">23524951</a>, PubMed:<a href="http://www.uniprot.org/citations/24587252" target="\_blank">24587252</a>, PubMed:<a href="http://www.uniprot.org/citations/32333458" target="\_blank">32333458</a>, PubMed:<a href="http://www.uniprot.org/citations/33854232" target="\_blank">33854232</a>, PubMed:<a href="http://www.uniprot.org/citations/33854235" target="\_blank">33854235</a>, PubMed:<a href="http://www.uniprot.org/citations/33854239" target="\_blank">33854239</a>). The DCX(AMBRA1) complex specifically mediates the polyubiquitination of target proteins such as BECN1, CCND1, CCND2, CCND3, ELOC and ULK1 (PubMed:<a href="http://www.uniprot.org/citations/23524951" target="\_blank">23524951</a>, PubMed:<a href="http://www.uniprot.org/citations/33854232" target="\_blank">33854232</a>, PubMed:<a href="http://www.uniprot.org/citations/33854235" target="\_blank">33854235</a>, PubMed:<a href="http://www.uniprot.org/citations/33854239" target="\_blank">33854239</a>). Acts as an upstream master regulator of the transition from G1 to S cell phase: AMBRA1 specifically

recognizes and binds phosphorylated cyclin-D (CCND1, CCND2 and CCND3), leading to cyclin-D ubiquitination by the DCX(AMBRA1) complex and subsequent degradation (PubMed:<a href="http://www.uniprot.org/citations/33854232" target="\_blank">33854232</a>, PubMed:<a href="http://www.uniprot.org/citations/33854235" target="\_blank">33854235</a>, PubMed:<a href="http://www.uniprot.org/citations/33854239" target="\_blank">33854239</a>). By controlling the transition from G1 to S phase and cyclin-D degradation, AMBRA1 acts as a tumor suppressor that promotes genomic integrity during DNA replication and counteracts developmental abnormalities and tumor growth (PubMed:<a href="http://www.uniprot.org/citations/33854232" target="\_blank">33854232</a>, PubMed:<a href="http://www.uniprot.org/citations/33854235" target="\_blank">33854235</a>, PubMed:<a href="http://www.uniprot.org/citations/33854239" target="\_blank">33854239</a>). AMBRA1 also regulates the cell cycle by promoting MYC dephosphorylation and degradation independently of the DCX(AMBRA1) complex: acts via interaction with the catalytic subunit of protein phosphatase 2A (PPP2CA), which enhances interaction between PPP2CA and MYC, leading to MYC dephosphorylation and degradation (PubMed:<a href="http://www.uniprot.org/citations/25438055" target="\_blank">25438055</a>, PubMed:<a href="http://www.uniprot.org/citations/25803737" target="\_blank">25803737</a>). Acts as a regulator of Cul5-RING (CRL5) E3 ubiquitin- protein ligase complexes by mediating ubiquitination and degradation of Elongin-C (ELOC) component of CRL5 complexes (PubMed:<a href="http://www.uniprot.org/citations/25499913" target="\_blank">25499913</a>, PubMed:<a href="http://www.uniprot.org/citations/30166453" target="\_blank">30166453</a>). Acts as a key regulator of autophagy by modulating the BECN1-PIK3C3 complex: controls protein turnover during neuronal development, and regulates normal cell survival and proliferation (PubMed:<a href="http://www.uniprot.org/citations/21358617" target="\_blank">21358617</a>). In normal conditions, AMBRA1 is tethered to the cytoskeleton via interaction with dyneins DYNLL1 and DYNLL2 (PubMed:<a href="http://www.uniprot.org/citations/20921139" target="\_blank">20921139</a>). Upon autophagy induction, AMBRA1 is released from the cytoskeletal docking site to induce autophagosome nucleation by mediating ubiquitination of proteins involved in autophagy (PubMed:<a href="http://www.uniprot.org/citations/20921139" target="\_blank">20921139</a>). The DCX(AMBRA1) complex mediates 'Lys-63'-linked ubiquitination of BECN1, increasing the association between BECN1 and PIK3C3 to promote PIK3C3 activity (By similarity). In collaboration with TRAF6, AMBRA1 mediates 'Lys-63'-linked ubiquitination of ULK1 following autophagy induction, promoting ULK1 stability and kinase activity (PubMed:<a href="http://www.uniprot.org/citations/23524951" target="\_blank">23524951</a>). Also activates ULK1 via interaction with TRIM32: TRIM32 stimulates ULK1 through unanchored 'Lys-63'-linked polyubiquitin chains (PubMed:<a href="http://www.uniprot.org/citations/31123703" target="\_blank">31123703</a>). Also acts as an activator of mitophagy via interaction with PRKN and LC3 proteins (MAP1LC3A, MAP1LC3B or MAP1LC3C); possibly by bringing damaged mitochondria onto autophagosomes (PubMed:<a href="http://www.uniprot.org/citations/21753002" target="\_blank">21753002</a>, PubMed:<a href="http://www.uniprot.org/citations/25215947" target="\_blank">25215947</a>). Also activates mitophagy by acting as a cofactor for HUWE1; acts by promoting HUWE1- mediated ubiquitination of MFN2 (PubMed:<a href="http://www.uniprot.org/citations/30217973" target="\_blank">30217973</a>). AMBRA1 is also involved in regulatory T-cells (Treg) differentiation by promoting FOXO3 dephosphorylation independently of the DCX(AMBRA1) complex: acts via interaction with PPP2CA, which enhances interaction between PPP2CA and FOXO3, leading to FOXO3 dephosphorylation and stabilization (PubMed:<a href="http://www.uniprot.org/citations/30513302" target="\_blank">30513302</a>). May act as a regulator of intracellular trafficking, regulating the localization of active PTK2/FAK and SRC (By similarity). Also involved in transcription regulation by acting as a scaffold for protein complexes at chromatin (By similarity).

### Cellular Location

Endoplasmic reticulum. Cytoplasm, cytoskeleton. Cytoplasmic vesicle, autophagosome {ECO:0000250|UniProtKB:A2AH22}. Mitochondrion. Cytoplasm, cytosol {ECO:0000250|UniProtKB:A2AH22}. Nucleus. Cell junction, focal adhesion {ECO:0000250|UniProtKB:A2AH22}. Note=Localizes to the cytoskeleton in absence of autophagy

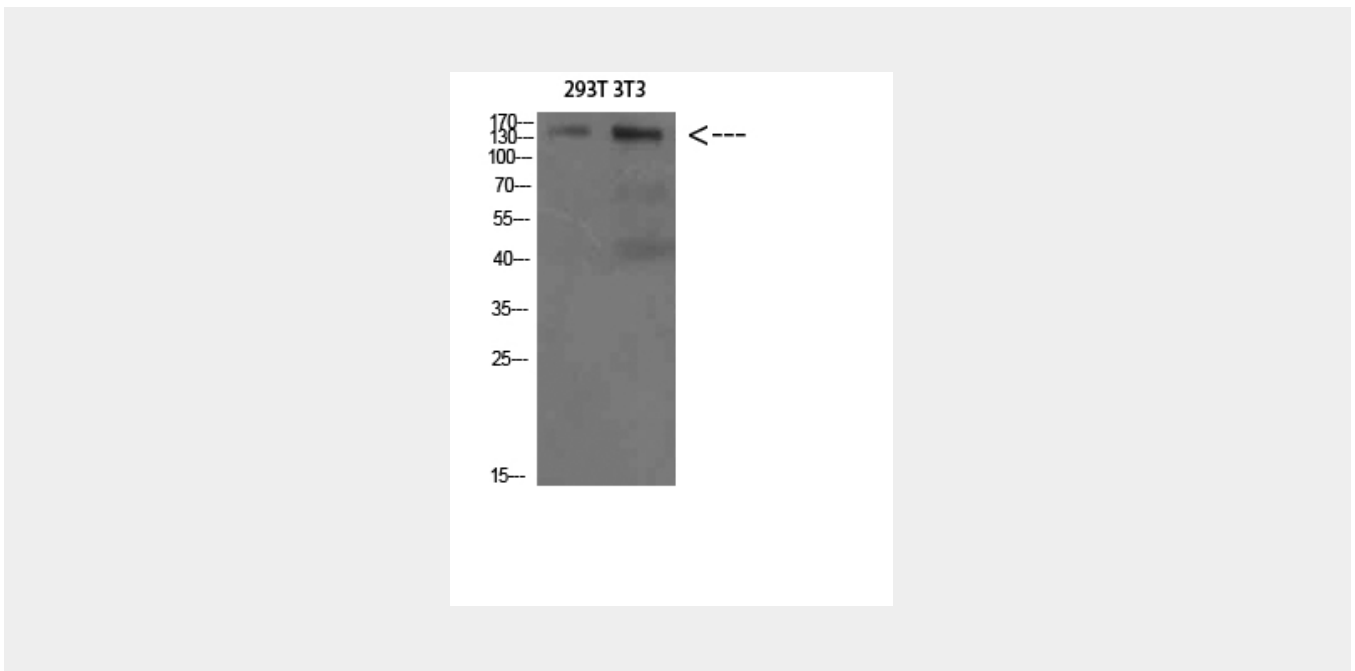
induction (PubMed:20921139). Upon autophagy induction, AMBRA1 relocalizes to the endoplasmic reticulum to enable autophagosome nucleation (PubMed:20921139). Partially localizes at mitochondria in normal conditions (PubMed:21358617). Localizes also to discrete punctae along the ciliary axoneme (By similarity) {ECO:0000250|UniProtKB:A2AH22, ECO:0000269|PubMed:20921139, ECO:0000269|PubMed:21358617}

### AMBRA1 Polyclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### AMBRA1 Polyclonal Antibody - Images



### AMBRA1 Polyclonal Antibody - Background

Regulates autophagy and development of the nervous system. Involved in autophagy in controlling protein turnover during neuronal development, and in regulating normal cell survival and proliferation (By similarity).