

**AMBRA1 Antibody (N-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP1826a****Specification**

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**AMBRA1 Antibody (N-term) - Product Information**

Application	IHC-P, WB,E
Primary Accession	<a href="#">O9C0C7</a>
Other Accession	<a href="#">A2AH22</a>
Reactivity	Human
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	142507
Antigen Region	27-55

**AMBRA1 Antibody (N-term) - Additional Information****Gene ID** 55626**Other Names**

Activating molecule in BECN1-regulated autophagy protein 1, AMBRA1, KIAA1736

**Target/Specificity**

This AMBRA1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 27-55 amino acids from the N-terminal region of human AMBRA1.

**Dilution**

IHC-P~~1:10~50

WB~~1:1000

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**

AMBRA1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**AMBRA1 Antibody (N-term) - 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:[20921139](#), PubMed:[23524951](#), PubMed:[24587252](#), PubMed:[32333458](#), PubMed:[33854232](#), PubMed:[33854235](#), PubMed:[33854239](#)). The DCX(AMBRA1) complex specifically mediates the polyubiquitination of target proteins such as BECN1, CCND1, CCND2, CCND3, ELOC and ULK1 (PubMed:[23524951](#), PubMed:[33854232](#), PubMed:[33854235](#), PubMed:[33854239](#)). 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:[33854232](#), PubMed:[33854235](#), PubMed:[33854239](#)). 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:[33854232](#), PubMed:[33854235](#), PubMed:[33854239](#)). 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:[25438055](#), PubMed:[25803737](#)). 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:[25499913](#), PubMed:[30166453](#)). 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:[21358617](#)). In normal conditions, AMBRA1 is tethered to the cytoskeleton via interaction with dyneins DYNLL1 and DYNLL2 (PubMed:[20921139](#)). Upon autophagy induction, AMBRA1 is released from the cytoskeletal docking site to induce autophagosome nucleation by mediating ubiquitination of proteins involved in autophagy (PubMed:[20921139](#)). 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:[23524951](#)). Also activates ULK1 via interaction with TRIM32: TRIM32 stimulates ULK1 through unanchored 'Lys-63'-linked polyubiquitin chains (PubMed:[31123703](#)). 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:[21753002](#), PubMed:[25215947](#)). Also activates mitophagy by acting as a cofactor for HUWE1; acts by promoting HUWE1- mediated ubiquitination of MFN2 (PubMed:[30217973](#)). 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:[30513302](#)). 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

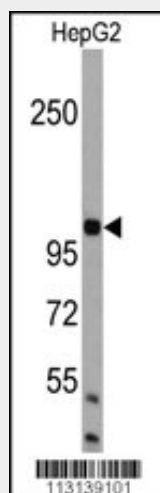
Endoplasmic reticulum. Cytoplasm, cytoskeleton. Cytoplasmic vesicle, autophagosome {ECO:0000250|UniProtKB:A2AH22}. Mitochondrion. Cytoplasm, cytosol {ECO:0000250|UniProtKB:A2AH22}. Nucleus. Cell junction, focal adhesion {ECO:0000250|UniProtKB:A2AH22}. Note=Localizes to the cytoskeleton in absence of autophagy induction (PubMed:20921139). Upon autophagy induction, AMBRA1 relocates to the endoplasmic reticulum to enable autophagosome nucleation (PubMed:20921139). Partially localizes at mitochondria in normal conditions (PubMed:21358617). Also localizes to discrete punctae along the ciliary axoneme (By similarity) {ECO:0000250|UniProtKB:A2AH22, ECO:0000269|PubMed:20921139, ECO:0000269|PubMed:21358617}

### AMBRA1 Antibody (N-term) - Protocols

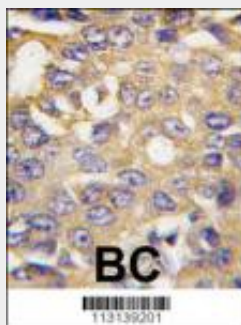
Provided below are standard protocols that you may find useful for product applications.

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

#### **AMBRA1 Antibody (N-term) - Images**



Western blot analysis of AMBRA1 Antibody (N-term) in HepG2 cell line lysates (35ug/lane). AMBRA1 (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human breast carcinoma tissue reacted with AMBRA1 antibody (N-term) (Cat.#AP1826a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

#### **AMBRA1 Antibody (N-term) - Background**

AMBRA1 regulates autophagy and development of the nervous system. This protein is involved in autophagy in controlling protein turnover during neuronal development, and in regulating normal cell survival and proliferation.

#### **AMBRA1 Antibody (N-term) - References**

Maria Fimia G., Nature 447:1121-1125(2007).  
Nagase T., DNA Res. 7:347-355(2000).  
Ota T., Nat. Genet. 36:40-45(2004).