

Active Recombinant Human ATG7, His-tagged

Cat. No. ATG7-169H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human ATG7 (amino acid residues 1-706), fused with N-terminal His, was expressed in Insect sf21.
Species	Human
Source	Insect Cells
ProteinLength	1-706 a.a.
Description	Ubiquitin-like proteins (ubl) Autophagy 12 (ATG12) and ATG8 are activated by ATG7 the E1-like activating enzyme. ATG12 and ATG8 are transferred to two E2-like conjugating enzymes ATG10 and ATG3 respectively. Cloning of the human ATG7 gene was first described by Yuan et al. (1999) and ATG7 shares 38% sequence identity to its yeast homologue Apg7. ATG7 can also activate ATG8 mammalian homologues, GABARAP and GATE-16. It forms a homodimer via the C-terminal region that is important for enzyme substrate interaction and E1-E2 complex formation (Komatsu et al. 2005).
Form	50 mM HEPES pH 7.5, 150 mM sodium chloride, 2 mM dithiothreitol, 10% glycerol
Bio-activity	E1 Thioester GABARAP Loading Assay: The activity of His-ATG7 was validated by loading GABARAP onto the active cysteine of His-ATG7. Incubation of the His-ATG7 enzyme in the presence of GABARAP and ATP at 30°C was compared at two time points, T0 and T10 minutes. Sensitivity of the GABARAP/His-ATG7 thioester bond to the reducing agent DTT was confirmed.

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Molecular Mass	81.34 kDa
Purity	>95% by SDS-PAGE
Storage	12 months at -70°C. Avoid multiple freeze/thaw cycles.
Concentration	0.5 mg/ml

GENE INFORMATION

Gene Name	ATG7 ATG7 autophagy related 7 homolog (S. cerevisiae) [Homo sapiens]
Official Symbol	ATG7
Synonyms	ATG7; ATG7 autophagy related 7 homolog (S. cerevisiae); APG7 autophagy 7 like (S. cerevisiae) , APG7L; ubiquitin-like modifier-activating enzyme ATG7; DKFZp434N0735; GSA7; hAGP7; autophagy-related protein 7; ATG12-activating enzyme E1 ATG7; ubiquitin activating enzyme E1-like protein; ubiquitin-activating enzyme E1-like protein; APG7L; APG7-LIKE;
Gene ID	10533
mRNA Refseq	NM_001136031
Protein Refseq	NP_001129503
MIM	608760
UniProt ID	O95352
Chromosome Location	3p25.3-p25.2

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Pathway

Adaptive Immune System, organism-specific biosystem; Antigen processing: Ubiquitination and Proteasome degradation, organism-specific biosystem; Class I MHC mediated antigen processing & presentation, organism-specific biosystem; Immune System, organism-specific biosystem; Regulation of autophagy, organism-specific biosystem;

Function

APG12 activating enzyme activity; catalytic activity; nucleotide binding; protein binding; protein homodimerization activity; ubiquitin activating enzyme activity;