ATG5 Protein, Human

Cat. No.:	HY-P7620
Synonyms:	rHuATG5; Autophagy protein 5; APG5-like; Apoptosis-specific protein; APG5L; ASP; ATG5;
Species:	Human
Source:	E. coli
Accession:	Q9H1Y0 (M1-D275)
Gene ID:	9474
Molecular Weight:	Approximately 33.0 kDa

PROPERTIES

AA Sequence	M T D D K D V L R D V W F G R I P T C F T L Y Q D E I T E R E A E P Y Y L L L P R V S Y L T L V T D K V K K H F Q K V M R Q E D I S E I W F E Y E G T P L K W H Y P I G L L F D L L A S S S A L P W N I T V H F K S F P E K D L L H C P S K D A I E A H F M S C M K E A D A L K H K S Q V I N E M Q K K D H K Q L W M G L Q N D R F D Q F W A I N R K L M E Y P A E E N G F R Y I P F R I Y Q T T T E R P F I Q K L F R P V A A D G Q L H T L G D L L K E V C P S A I D P E D G E K K N Q V M I H G I E P M L E T P L Q W L S E H L S Y P D N F L H I S I I P Q P T D
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filter solution of 20 mM Tris, 0.2 M NaCl,1 mM DTT, 40%glycerol, pH 8.0 .
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	ATG5, a key participant in autophagic vesicle formation, undergoes conjugation with ATG12 through a ubiquitin-like system involving ATG7 as an E1-like activating enzyme and ATG10 as an E2-like conjugating enzyme. The resulting ATG12-ATG5 conjugate serves as an E3-like enzyme essential for lipidation of ATG8 family proteins and their association with vesicle membranes. Beyond its role in autophagy, ATG5 contributes to mitochondrial quality control post-oxidative damage, impacting cellular longevity. It plays a critical role in lymphocyte development, vital for the survival and proliferation of both B and T lymphocytes, and is necessary for optimal antigen processing and presentation for MHC II. Additionally, ATG5

is involved in maintaining axon morphology, normal adipocyte differentiation, and promoting primary ciliogenesis through autophagic pathways. Moreover, it may play a crucial role in apoptotic processes, occurring downstream of caspase activity, and participates in IFN-gamma-induced autophagic cell death through interaction with FADD.

REFERENCES

[1]. Shida Yousefi, et al. Calpain-mediated cleavage of Atg5 switches autophagy to apoptosis. Nat Cell Biol. 2006 Oct;8(10):1124-32.

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