

ATG14 Protein, Human (Myc, His)

Cat. No.:	HY-P71576
Synonyms:	4832427M01; ATG14; Atg14L; Autophagy-related protein 14-like protein; Barkor; Beclin 1- associated autophagy-related key regulator; D14Ertd114e
Species:	Human
Source:	E. coli
Accession:	Q6ZNE5 (M1-R492)
Gene ID:	22863
Molecular Weight:	Approximately 70 kDa

PROPERTIES

An Sequence	MASPSGKGAR	ALEAPGCGPR	PLARDLVDSV	DDAEGLYVAV		
	ERCPLCNTTR	RRLTCAKCVQ	SGDFVYFDGR	DRERFIDKKE		
	RLSRLKSKQE	EFQKEVLKAM	EGKWITDQLR	WKIMSCKMRI		
	EQLKQTICKG	ΝΕΕΜΕΚΝՏΕG	LLKTKEKNQK	L Y S R A Q R H Q E		
	KKEKIQRHNR	KLGDLVEKKT	IDLRSHYERL	ANLRRSHILE		
	LTSVIFPIEE	VKTGVRDPAD	VSSESDSAMT	SSTVSKLAEA		
	R R T T Y L S G R W	VCDDHNGDTS	ISITGPWISL	P N N G D Y S A Y Y		
	SWVEEKKTTQ	G P D M E Q S N P A	YTISAALCYA	TQLVNILSHI		
	LDVNLPKKLC	NSEFCGENLS	KQKFTRAVKK	LNANILYLCF		
	SQHVNLDQLQ	PLHTLRNLMY	LVSPSSEHLG	RSGPFEVRAD		
	LEESMEFVDP	GVAGESDESG	DERVSDEETD	LGTDWENLPS		
	PRFCDIPSQS	VEVSQSQSTQ	ΑSPPIASSSA	GGMISSAAAS		
	VTSWFKAYTG	HR				
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.					
Appearance	Lyophilized powder.					
Formulation	Lyophilized after extensive dialysis against solution in 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.					
Endotoxin Level	<1 EU/µg, determined by LAL method.					
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 $\mu\text{g}/\text{mL}$ in ddH_2O.					
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.					
Shipping	Room temperature in conti	nental US; may vary elsewh	ere.			

DESCRIPTION

Background

ATG14 is essential for both basal and inducible autophagy, playing a pivotal role in determining the localization of the autophagy-specific PI3-kinase complex PI3KC3-C1. This protein contributes to autophagosome formation and MAP1LC3/LC3 conjugation to phosphatidylethanolamine while facilitating BECN1 translocation from the trans-Golgi network to autophagosomes. ATG14 enhances PIK3C3 activity in a BECN1-dependent manner and is crucial for the autophagy-dependent phosphorylation of BECN1. It stimulates BECN1 phosphorylation but suppresses PIK3C3 phosphorylation by AMPK. Additionally, ATG14 binds to the STX17-SNAP29 binary t-SNARE complex on autophagosomes, priming it for VAMP8 interaction to promote autophagosome-endolysosome fusion. Homooligomerization of ATG14 is vital for its roles in membrane tethering and enhancement of SNARE-mediated fusion. As a component of the PI3K complex I, ATG14 is associated with the catalytic subunit PIK3C3, regulatory subunit PIK3R4, and BECN1, displaying a V-shaped architecture. ATG14 interacts with various partners, including PIK3CB, BECN2, the STX17-SNAP29 binary t-SNARE complex, and NRBF2, underscoring its multifaceted involvement in autophagic processes and cellular functions. Interactions with PIK3C3 and BECN1 are influenced by the absence of TMEM39A, emphasizing the intricate regulatory network of ATG14 in autophagy.

Caution: Product has not been fully validated for medical applications. For research use only.

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