MDM2 Protein, Human

Cat. No.:	HY-P701593
Synonyms:	MDM2; E3 ubiquitin-protein ligase Mdm2; Double minute 2 protein; Hdm2; Oncoprotein Mdm2; RING-type E3 ubiquitin transferase Mdm2; p53-binding protein Mdm2
Species:	Human
Source:	E. coli
Accession:	Q00987 (S17-N111)
Gene ID:	4193
Molecular Weight:	11.1 KDa

PROPERTIES

Appearance	Solution
Formulation	Supplied as a 0.22 μm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol, 1mM DTT.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	Please use rapid thawing with running water to thaw the protein.
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

MDM2 Protein, an E3 ubiquitin-protein ligase, plays a central role in the intricate regulation of cellular processes by mediating the ubiquitination and subsequent proteasomal degradation of the tumor suppressor p53/TP53, leading to its downregulation. Beyond its interaction with p53/TP53, MDM2 inhibits p53/TP53- and p73/TP73-mediated cell cycle arrest and apoptosis by binding to their transcriptional activation domain, highlighting its role as a negative regulator of these critical cellular responses. Not limited to its interactions with p53/TP53, MDM2 functions as a ubiquitin ligase E3 toward itself and ARRB1, permitting the nuclear export of p53/TP53 and promoting the proteasome-dependent ubiquitin-independent degradation of retinoblastoma RB1 protein. Additionally, MDM2 inhibits DAXX-mediated apoptosis by inducing its ubiquitination and degradation, demonstrating its versatile involvement in apoptotic pathways. As a component of various complexes, including TRIM28/KAP1-MDM2-p53/TP53 and TRIM28/KAP1-ERBB4-MDM2, MDM2 links growth factor and DNA damage response pathways. It further mediates ubiquitination and proteasome degradation of DYRK2, IGF1R, SNAI1, DCX, and DLG4, influencing diverse cellular functions such as dendritic spine density, receptor endocytosis, and mitochondrial respiration. Through its interactions with NDUFS1, MDM2 negatively regulates mitochondrial respiration, leading to increased oxidative stress and commitment to the mitochondrial pathway of apoptosis. These multifaceted roles underscore the intricate regulatory functions of MDM2 in cellular homeostasis and stress responses.

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

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