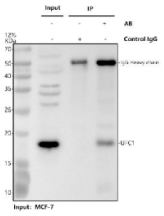
UFC1 Antibody / Ubiquitin-fold modifier conjugating enzyme 1 (FY13445)

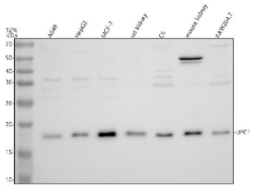
Catalog No.	Formulation	Size
FY13445	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

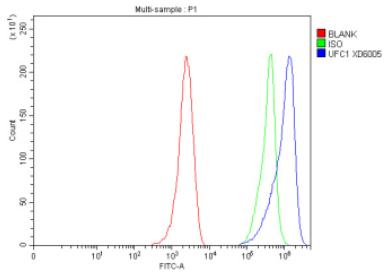
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
UniProt	Q9Y3C8
Localization	Nucleus, Cytoplasm
Applications	Immunoprecipitation : 2ug per 500ug of lysate Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This UFC1 antibody is available for research use only.



Immunoprecipitation of UFC1 protein from 500ug of human MCF7 whole cell lysate with 2ug of UFC1 antibody.



Western blot analysis of UFC1 using anti-UFC1 antibody. UFC1 antibody detects a specific band at approximately 19 kDa, consistent with the predicted molecular weight of Ubiquitin-fold modifier conjugating enzyme 1. Samples were resolved on a 12% SDS-PAGE gel under reducing conditions and transferred to a nitrocellulose membrane. Lane 1: human A549 whole cell lysates; Lane 2: human HepG2 whole cell lysates; Lane 3: human MCF-7 whole cell lysates; Lane 4: rat kidney tissue lysates; Lane 5: rat C6 whole cell lysates; Lane 6: mouse kidney tissue lysates; Lane 7: mouse Raw264.7 whole cell lysates. Detection was performed using HRP-based chemiluminescence, demonstrating consistent UFC1 expression across cell lines and tissues examined.



Flow cytometry analysis of fixed and permeabilized human MCF7 cells with UFC1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= UFC1 antibody.

Description

UFC1 antibody targets Ubiquitin-fold modifier conjugating enzyme 1, encoded by the UFC1 gene. Ubiquitin-fold modifier conjugating enzyme 1 is a cytoplasmic enzyme that functions as the E2 conjugating component of the UFM1 modification pathway, a ubiquitin-like system that regulates protein quality control and cellular stress responses. In this pathway, UFC1 accepts activated UFM1 from the E1 enzyme UBA5 and cooperates with the E3 ligase UFL1 to transfer UFM1 to specific substrate proteins, enabling ufmylation as a post-translational regulatory mechanism.

Functionally, Ubiquitin-fold modifier conjugating enzyme 1 plays an essential role in maintaining endoplasmic reticulum homeostasis and supporting cellular adaptation to proteotoxic stress. UFM1 conjugation mediated by UFC1 has been linked to ribosome-associated quality control, ER-associated protein processing, and regulation of secretory pathways. Through these activities, UFC1 helps coordinate cellular responses to disruptions in protein folding and trafficking. A UFC1 antibody supports studies examining ufmylation-dependent signaling and stress-regulated protein modification.

UFC1 is broadly expressed across many tissues and cell types, reflecting the fundamental requirement for UFM1-mediated regulation in diverse biological contexts. Its function is particularly relevant in cells with high secretory demand or elevated metabolic activity, where ER stress pathways must be precisely controlled. UFC1 operates within a dynamic enzyme complex, forming transient thioester-linked intermediates with UFM1 that enable controlled transfer to downstream targets.

From a disease-relevance perspective, dysregulation of the UFM1 conjugation system, including altered UFC1 activity, has been implicated in cancer, neurodevelopmental disorders, and inflammatory conditions. Impaired ufmylation can compromise ER integrity and protein homeostasis, contributing to pathological cellular states. As a result, Ubiquitin-fold modifier conjugating enzyme 1 has emerged as a protein of interest in studies of stress signaling and disease-associated protein modification pathways.

At the molecular level, UFC1 contains conserved catalytic residues characteristic of E2 enzymes that are required for UFM1 thioester bond formation. Its apparent behavior in biochemical assays can be influenced by interaction partners, enzymatic state, or cellular context. UFC1 antibody reagents support research applications focused on ufmylation biology, ER stress regulation, and protein quality control, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the UFC1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human Ubiquitin-fold modifier conjugating enzyme 1 recombinant protein (amino acids M1-Q167) was used as the immunogen for the UFC1 antibody.

Storage

After reconstitution, the UFC1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.