Product Name: OTUB1 Rabbit Monoclonal antibody
Catalog #: AMRe02377

Summary

Production Name	OTUB1 Rabbit Monoclonal antibody
Description	Recombinant Rabbit Monoclonal antibody
Host	Rabbit
Application	WB,IP
Reactivity	Human,Mouse,Rat

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Monoclonal Antibody
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40% Glycerol, 0.01% Sodium azide and 0.05% BSA
Purification	Affinity Purified

Immunogen

Gene Name	OTUB1
Alternative Names	OTUB1; OTB1; OTU1; HSPC263; Ubiquitin thioesterase OTUB1; Deubiquitinating enzyme OTUB1; OTU domain-containing ubiquitin aldehyde-binding protein 1; Otubain-1; hOTU1; Ubiquitin-specific-processing protease OTUB1
Gene ID	55611
SwissProt ID	Q96FW1.

Application

Dilution Ratio	WB: 1:500-1:1000 IP: 1:20
Molecular Weight	Calculated MW: 31 kDa; Observed MW: 31 kDa

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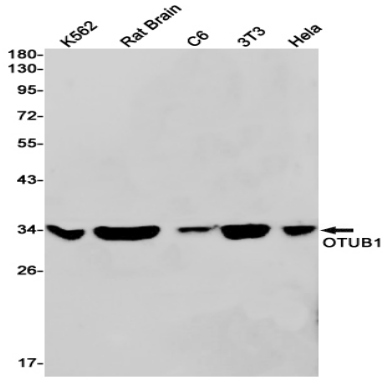
Background

Hydrolase that can specifically remove 'Lys-48'-linked conjugated ubiquitin from proteins and plays an important regulatory role at the level of protein turnover by preventing degradation. Regulator of T-cell anergy, a phenomenon that occurs when T-cells are rendered unresponsive to antigen rechallenge and no longer respond to their cognate antigen. Acts via its interaction with RNF128/GRAIL, a crucial inductor of CD4 T-cell anergy. Isoform 1 destabilizes RNF128, leading to prevent anergy. In contrast, isoform 2 stabilizes RNF128 and promotes anergy. Surprisingly, it regulates RNF128-mediated ubiquitination, but does not deubiquitinate polyubiquitinated RNF128. Deubiquitinates estrogen receptor alpha (ESR1). Mediates deubiquitination of 'Lys-48'-linked polyubiquitin chains, but not 'Lys-63'-linked polyubiquitin chains. Not able to cleave di-ubiquitin. Also capable of removing NEDD8 from NEDD8 conjugates, but with a much lower preference compared to 'Lys-48'-linked ubiquitin.Plays a key non-catalytic role in DNA repair regulation by inhibiting activity of RNF168, an E3 ubiquitin-protein ligase that promotes accumulation of 'Lys-63'-linked histone H2A and H2AX at DNA damage sites. Inhibits RNF168 independently of ubiquitin thioesterase activity by binding and inhibiting UBE2N/UBC13, the E2 partner of RNF168, thereby limiting spreading of 'Lys-63'-linked histone H2A and H2AX marks. Inhibition occurs by binding to free ubiquitin: free ubiquitin acts as an allosteric regulator that increases affinity for UBE2N/UBC13 and disrupts interaction with UBE2V1. The OTUB1-UBE2N/UBC13-free ubiquitin complex adopts a configuration that mimics a cleaved 'Lys48'-linked di-ubiquitin chain.MiscellaneousIn the structure described by PubMed:18954305, the His-265 active site of the catalytic triad is located too far to interact directly with the active site Cys-91. A possible explanation is that OTUB1 is in inactive conformation in absence of ubiquitin and a conformation change may move His-265 in the proximity of Cys-91 in presence of ubiquitin substrate.

Research Area

Epigenetics and Nuclear Signaling

Image Data



Western blot analysis of OTUB1 in K562, rat Brain, C6, 3T3, Hela lysates using OTUB1 antibody.

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Note

For research use only.