

# OTUB1 monoclonal antibody

Catalog: MB11345

Host: R

Rabbit

Reactivity: Human, Mouse, Rat

## **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.

#### **Product:**

50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40% Glycerol, 0.01% Sodium azide and 0.05% BSA

Molecular Weight:

Calculated MW: 31 kDa; Observed MW: 31 kDa

**Swiss-Prot:** 

Q96FW1

**Purification&Purity:** 

Affinity Purified

**Applications:** 

WB: 1/500-1/1000 IP: 1/20

Storage&Stability:

Store at  $4 \,^{\circ}{\rm C}$  short term. Aliquot and store at  $-20 \,^{\circ}{\rm C}$  long term. Avoid freeze-thaw cycles.

**Isotype:** 

IgG

**DATA:** 



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

#### Note:

For research use only, not for use in diagnostic procedure.

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