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USP14 Antibody
Chicken Polyclonal Antibody
Catalog # ABV11128

Specification

USP14 Antibody - Product Information

Application	**WB**
Primary Accession	P54578
Reactivity	**Human**
Host	**Chicken**
Clonality	**Polyclonal**
Isotype	**Chicken IgG**
Calculated MW	**56069**

USP14 Antibody - Additional Information

Gene ID 9097

Application & Usage	**Western blot: Robust detection of 100 ng of recombinant protein was possible when antibody was used at a final concentration of 5 µg/mL**

Other Names
Deubiquitinating enzyme 14, TGT, Ubiquitin carboxyl-terminal hydrolase 14, Ubiquitin-specific processing protease 14, Ubiquitin thioesterase 14, Ubiquitin-specific-processing protease 14

Target/Specificity
USP14

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
50 µg of antibody in PBS containing 10% glycerol

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
USP14 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

USP14 Antibody - Protein Information

Name USP14

Synonyms TGT

Function
Proteasome-associated deubiquitinase which releases ubiquitin from the proteasome targeted ubiquitinated proteins (PubMed:35145029). Ensures the regeneration of ubiquitin at the proteasome (PubMed:18162577, PubMed:28396413). Is a reversibly associated subunit of the proteasome and a large fraction of proteasome-free protein exists within the cell (PubMed:18162577). Required for the degradation of the chemokine receptor CXCR4 which is critical for CXCL12-induced cell chemotaxis (PubMed:19106094). Also serves as a physiological inhibitor of endoplasmic reticulum-associated degradation (ERAD) under the non-stressed condition by inhibiting the degradation of unfolded endoplasmic reticulum proteins via interaction with ERN1 (PubMed:19135427). Indispensable for synaptic development and function at neuromuscular junctions (NMJs) (By similarity). Plays a role in the innate immune defense against viruses by stabilizing the viral DNA sensor CGAS and thus inhibiting its autophagic degradation (PubMed:27666593). Inhibits OPTN-mediated selective autophagic degradation of KDM4D and thereby negatively regulates H3K9me2 and H3K9me3 (PubMed:35145029).

Cellular Location
Cytoplasm. Cell membrane; Peripheral membrane protein

USP14 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

USP14 Antibody - Images

USP14 Antibody - Background

Ubiquitinating enzymes (UBEs) catalyze protein ubiquitination, a reversible process countered by deubiquitinating enzyme (DUB) action. Five DUB subfamilies are recognized, including the USP, UCH, OTU, MJD, and JAMM enzymes. In humans, there are three proteasomal DUBs: PSMD14 (POH1/RPN11), UCH37 (UCH-L5), and Ubiquitin-Specific Protease 14, which is also known as the 60 kDa subunit of tRNA-guanine transglycosylase (USP14/TGT60 kDa). USP14 is recruited to the proteasome through its reversible association with the PSMD2 (S2/hRPN1) subunit of the 19S

regulatory particle. Whereas PSMD14 appears to promote substrate degradation, USP14 is thought to antagonize substrate degradation. While the underlying mechanism for the opposing roles of these two proteasomal DUBs is still uncertain, it is thought that USP14 removes ubiquitin from substrate upon docking of the substrate with the 26S proteasome. Furthermore, USP14 trims ubiquitin residues from the distal end of the polyubiquitin chain, thus decreasing the affinity of the chain for the ubiquitin receptors of the proteasome, and allowing for enhanced substrate stability. Studies have elucidated a physiologic role for USP14 in regulating synaptic activity in mammals. Research studies have shown that targeting this activity with small molecule inhibitors has potential benefits for the treatment of neurodegenerative diseases and cancer.