

Product Information

Monoclonal Anti-USP25, Clone U25.7

produced in mouse, purified immunoglobulin

Product Number **U7883**

Product Description

Monoclonal Anti-USP25 (mouse IgG2a isotype) is derived from the hybridoma U25.7 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human USP25 (GeneID 29761). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-USP25 recognizes human, mouse, and rat USP25. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~126 kDa), and immunocytochemistry.

Essential regulatory proteins, which are involved in cell cycle, DNA repair, transcriptional activation, differentiation and development, are, among others, being processed by the ubiquitin (Ub) system. Ubiquitin is a highly conserved eukaryotic protein (76 amino acids) that plays a crucial role in intracellular protein degradation. The covalent attachment to Ub is required to target cellular proteins for degradation via the 26S-proteasome pathway.¹

Recycling of Ub is essential for the maintenance of the regulatory cell circuits. Two classes of deubiquitinating enzymes have been described: Ub carboxy-terminal hydrolases (UCH) and the Ub processing proteases (UBP). A novel UBP member, namely USP25, has been identified in the gene-poor region of 21q11.2 human chromosome.² This gene was found to have alternative spliced exons that could generate protein isoforms with distinct tissue-specific activity.³ USP25 turned out to be a target for sumoylation, which takes place within USP25's two Ub interaction motifs (UIM) that are required for efficient hydrolysis of Ub, and thus impairs USP25 activity as a result of reduced affinity to Ub chains.⁴ This mechanism points to the tight control of regulatory protein degradation, which once violated, may result in aneuploidy events.

Indeed, overexpression of USP25 has been demonstrated in Down syndrome fetal brain, supporting its involvement in its pathology. Such an involvement was also suggested for other UBPs gene-dosage effects in aneuploidy syndromes.³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1–2 µg/mL is recommended using total extract of HEK-293T cells expressing USP25.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Ha, B.H., and Kim, E.E., *BMB Rep.*, **41**, 435-443 (2008).
2. Valero, R. et al., *Genomics*, **62**, 395-405 (1999).
3. Valero, R. et al., *Genome Biol.*, **2**, 1-10 (2001).
4. Meulmeester, E. et al., *Mol. Cell*, **30**, 610-619 (2008).

VS,GG,TD,KAA,PHC,MAM 01/19-1