Human Ubiquitin+1 Biotinylated Antibody

Monoclonal Mouse IgG_{2B} Clone # 83426

Catalog Number: BAM7032

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Ubiquitin+1 in direct ELISAs. This antibody recognizes an epitope from the carboxy-terminal segment that is unique to Ubiquitin+1. It does not cross-react with Ubiquitin.
Source	Monoclonal Mouse IgG_{2B} Clone # 83426
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Ubiquitin+1
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human Ubiquitin+1 (Catalog # 703-UB)
Human Ubiquitin+1 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Human Ubiquitin+1 Antibody (Catalog # MAB7031)
ELISA Detection	0.5-2.0 µg/mL	Human Ubiquitin+1 Biotinylated Antibody (Catalog # BAM7032)
Standard		Recombinant Human Ubiquitin+1 (Catalog # 703-UB)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Ubiquitin (Ub) is a 6 - 7 kDa polypeptide whose name derives from the observation that Ubiquitin possesses a highly conserved structure that is found in virtually all plant and animal species (1, 2). Ubiquitin is globular in nature, 76 amino acids (aa) in length, contains multiple lysines plus two C-terminal glycines. In human, there are at least four genes that code for Ubiquitin. Found on human chromosomes 17 (UbB), 2 (UbA-80), 19 (UbA-52) and 12 (UbC), all genes code for a Ubiquitin polymer that undergoes proteolytic processing to generate free, monoubiquitin (3 - 7). In general, about one-half of all Ubiquitin exists in a monomeric form within the cell (8). Ubiquitin can also be added posttranslationally to multiple cell proteins. In conjunction with Ubiquitin ligases E1, 2 and 3, Ubiquitin is covalently attached to amino groups on target molecules via its C-terminal glycines, either at the N-terminus, or on any exposed amino acid that precedes the target's C-terminus (9). Further structural complexity may be added through Ubiquitin binding to Ubiquitin. Depending upon the exact pattern created, cellular proteins possessing UAD (Ub-associated domain) and UIM (Ub-interacting motif) sequences will selectively bind ubiquitinated proteins and incorporate them into multiple signaling pathways or regulatory complexes (10, 11). The UbB gene codes for a 229 aa precursor. This precursor contains three contiguous head-to-tail, 76 aa Ub sequences that ends with a C-terminal cysteine. A truncated mutation for UbB, termed Ubiquitin+1, has now been reported, that shows a 20 aa substitution for the last Gly of the first Ub sequence, generating a 95 aa polypeptide (12). Although a mutation, this molecule is apparently commonly expressed (13). At low levels of expression, it is degraded in a proteosome-dependent manner. At high levels, it overwhelms the proteosome system and accumulates, inhibiting proteosome activity (13). This is suggested to contribute to pathology associated with polyglutamine diseases (14).

References:

1. Rechsteiner, M. (1987) Annu. Rev. Cell Biol. **3**:1.
2. Hershko, A. and A. Ciechanover (1998) Annu. Rev. Biochem. **67**:425.
3. Kim, N-S. *et al.* (1998) J. Biochem. **124**:35.
4. Lund, P.K. *et al.* (1985) J. Biol. Chem. **260**:7609.
5. Redman, K.L. and M. Rechsteiner (1989) Nature **338**:438.
6. Monia, B.P. *et al.* (1989) J. Biol. Chem. **264**:4093.
7. Wiborg, O. *et al.* (1985) EMBO J. **4**:755.
8. Agell, N. *et al.* (1988) Proc. Natl. Acad. Sci. USA **85**:3693.
9. Ciechanover, A. and R. Ben-Saadon (2004) Trends Cell Biol. **14**:103.
10. Kim, H. T. *et al.* (2007) J. Biol. Chem. **282**:17375.
11. Ye, Y. and M. Rape (2009) Nat. Rev. Mol. Cell Biol. **10**:755.
12. van Leeuwen, F.W, *et al.* (1998) Science **279**:242.
13. van Tijn, P. *et al.* (2007) J. Cell Sci. **120**:1615.
14. de Pril, R. *et al.* (2004) Hum. Mol. Genet. **13**:1803.

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