# Ubiquitin Polyclonal Antibody

## Product Specifications

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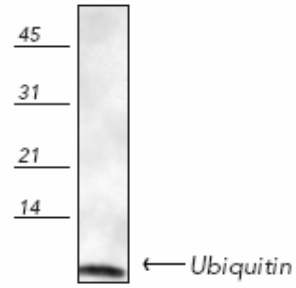
|---|---|
| **Catalog Number:** | SPA-200 |
| **Host:** | Rabbit |
| **Species Reactivity:** | Human, monkey, mouse, rat, hamster, rabbit, guinea pig, bovine, pig, canine, sheep, chicken, *Xenopus*, yeast, *Drosophila*, and fish (rainbow trout)<br>Other species not tested. |
| **Applications:**<br>*The optimal dilution for a specific application must be determined by the investigator* | **WB**[7-9]**:** 1:5000 (ECL)<br>*Note: Works with PVDF membranes only*<br>Other applications not tested. |
| **Predicted m.w:** | ~10 kDa |
| **Concentration:** | See product label |
| **Purification:** | Protein A Affinity |
| **Format:** | PBS, pH 7.2, 0.09% azide, 50% glycerol |
| **Storage:**<br>*Shipping conditions may differ from the recommended storage temperature* | Store at -20°C |
| **Immunogen:** | Native bovine Ubiquitin, conjugated to KLH[5] |
| **Related Products**: | |
| LYC-HL101 | HeLa Cell Lysate (Heat Shocked) |
| LYT-MB100 | Mouse Brain Tissue Extract |
| SAB-300 | Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate |
| SPA-203 | Ubiquitin Monoclonal Antibody (P4G7-H11) |
| SPA-205 | Multi Ubiquitin Monoclonal Antibody (FK2) |




Western blot analysis of ubiquitin protein, probed with Ubiquitin Polyclonal Antibody

## Background:

Ubiquitin is a 76-amino acid polypeptide expressed in all eukaryotic cells, highly conserved from yeast to humans[1]. The modification of proteins by chains of ubiquitin mediates targeting of cytosolic and nuclear proteins for degradation by proteasomes. Ubiquitination represents an essential cellular process affected by a multi-enzyme cascade involving classes of enzymes known as ubiquitin-activating enzymes (E1s), ubiquitin-conjugating enzymes (E2s or Ubcs) and ubiquitin-protein ligases (E3s). E1 activates ubiquitin in an ATP-dependent manner with the formation of a thiol-ester linkage between the carboxy terminus of ubiquitin and E1. Sequential, transient thiol-ester bonds then generate between the carboxyl terminus of ubiquitin and specific cysteines of E2 and E3 enzymes[2]. These bonds culminate in the formation of an isopeptide linkage between the activated carboxy terminus of ubiquitin and the ε-amino group of a lysine on a target protein, or within another ubiquitin chain (usually K48 of ubiquitin) resulting in the generation of chains of ubiquitin (polyubiquitin or multiubiquitin) from 4-20 ubiquitin moieties. Although the formation of K48-linked polyubiquitin chains on proteins constitutes a potent targeting signal for degradation in 26S proteasomes, ubiquitination is also reversible, and a number of not fully characterized deubiquitinating enzymes exist free in the cytosol[2]. Research exploring how proteasome targets ER-retained proteins for degradation suggests that ER chaperones (such as Cne1p/calnexin, Kar2p/BiP or other components of the protein processing or transport machineries) helped by cytosolic chaperones (such as members of the Hsp70 and DnaJ families) recognize, target and force misfolded, unassembled or aberrantly modified proteins through the translocon[2,4]. The retrotranslocated polypeptide chains are then released into the cytosol as soluble proteins or remain adhered to the cytosolic face of the ER membrane where deglycosylation and polyubiquitination followed by binding to the proteasome as well as degradation to peptides occurs. Ubiquitination also participates in the internalization and degradation of plasma membrane proteins such as some of the TCR subunits while still ER-membrane associated[3].

References:

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11. Zatloukal, K., *et al*. (2002) Am J Pathol. **160**, 255-263.

Assay Designs makes every effort to provide a consistent source of high quality polyclonal antibodies. However, due to variations inherent in this technology, investigators are urged to purchase sufficient quantities of a specific lot number if an identical antibody is required throughout a study.



5777 Hines Drive • Ann Arbor, MI • 48108 | Tel: 800-833-8651 or 800-668-6113 | Fax: 734-668-2793
www.assaydesigns.com | orders@assaydesigns.com | technical@assaydesigns.com

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