# Datasheet: MCA6040

**BATCH NUMBER 161145**

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| **Description:** | MOUSE ANTI PAN UBIQUITIN |
| **Specificity:** | PAN UBIQUITIN |
| **Format:** | Purified |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | P4D1 |
| **Isotype:** | IgG1 |
| **Quantity:** | 50 µg |

## Product Details

**Applications**

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

| | Yes | No | Not Determined | Suggested Dilution |
|---|---|---|---|---|
| Immunoprecipitation | ▪ | | | |
| Western Blotting | ▪ | | | 1/1000 |
| Immunocytochemistry | ▪ | | | |

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

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| **Target Species** | Broad |
| **Product Form** | Purified IgG - liquid |
| **Preparation** | Purified IgG prepared by ion exchange chromatography from tissue culture supernatant |
| **Buffer Solution** | Phosphate buffered saline |
| **Preservative Stabilisers** | <0.1% Sodium Azide ($NaN_3$) |
| **Approx. Protein Concentrations** | IgG concentration 1.0 mg/ml |
| **Immunogen** | Denatured bovine ubiquitin |

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| **Specificity** | **Mouse anti pan ubiquitin antibody, clone P4D1** recognizes both mono- and polyubiquitin chains. The antibody has also been reported to recognize free polyubiquitin chains and free ubiquitin.<br><br>Ubiquitin, as the name implies, is a ubiquitously expressed and highly conserved protein of 8.6 kDa. The protein is covalently linked to selected lysine residues in a post-translational modification process known as ubiquitylation or ubiquitination. This chemical reaction is mediated by three different protein families; ubiquitin-activating enzymes (also known as E1s), ubiquitin-conjugating enzymes (also known as E2s) and ubiquitin ligases (also known as E3s) (Hershko and Ciechanover 1998).<br><br>The impact of ubiquitination depends on whether a single ubiquitin moiety (monoubiquitination) or an ubiquitin chain (polyubiquitination) has been attached to a protein. Monoubiquitination tends to trigger cellular processes related to endocytosis and membrane trafficking (Haglund *et al.* 2003) while the impact of polyubiquitination varies depending on how the ubiquitin residues in the chain have been linked. Attachment of Lysine-48 ubiquitin chains results in degradation by the 20S proteasome while addition of Lysine-63 ubiquitin chains mediates DNA damage and NFkappaB signaling (Chen 2005 and Mocciaro and Rape 2012). Lysine-6, Lysine-11, Lysine-27, Lysine-29 and Lysine-33 chains have also been reported (Komander 2009 and Ye and Rape 2011).<br><br>When comparing staining of mouse anti pan ubiquitin antibody (clone P4D1) against staining with mouse anti polyubiquitin antibody (clone FK1) one can determine, if a protein target is mono- or polyubiquitinated. In contrast to mouse anti mono- and polyubiquitin antibody (FK2), clone P4D1 also recognizes free ubiquitin. |
| **Western Blotting** | Mouse anti pan ubiquitin recognizes mono- and poly-ubiquitin protein conjugates, free polyubiquitin chains and free ubiquitin by Western Blot. Use of milk based blocking reagents is not recommended. 1% BSA in PBS or TBS Tween should be used instead. |
| **References** | 1. Fujimuro, M. *et al* (1994) Production and characterization of monoclonal antibodies specific to multi-ubiquitin chains of polyubiquitinated proteins. FEBS Lett. 349 (2):173-80.<br>2. Wang, H. *et al.* (2008) Analysis of nondegradative protein ubiquitylation with a monoclonal antibody specific for lysine-63-linked polyubiquitin. Proc Natl Acad Sci U S A. 105 (51): 20197-202. |
| **Storage** | This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.<br><br>Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended. |
| **Guarantee** | 12 months from date of despatch |
| **Health And Safety Information** | Material Safety Datasheet documentation #10040 available at:<br>https://www.bio-rad-antibodies.com/SDS/MCA6040<br>10040 |

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| **Regulatory** | For research purposes only |

## Related Products

### Recommended Secondary Antibodies

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| Goat Anti Mouse IgG (STAR77...) | HRP |
| Rabbit Anti Mouse IgG (STAR12...) | RPE |
| Rabbit Anti Mouse IgG (STAR8...) | DyLight®800 |
| Goat Anti Mouse IgG (STAR76...) | RPE |
| Goat Anti Mouse IgG (Fc) (STAR120...) | FITC, HRP |
| Goat Anti Mouse IgG IgA IgM (STAR87...) | Alk. Phos., HRP |
| Rabbit Anti Mouse IgG (STAR13...) | HRP |
| Goat Anti Mouse IgG (STAR70...) | FITC |
| Rabbit Anti Mouse IgG (STAR9...) | FITC |
| Goat Anti Mouse IgG (H/L) (STAR117...) | Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP |


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