Revision 1

Store at -20C

#4995

# CUL1 Antibody

Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| WB, IP | H M R | Endogenous | 90 | Rabbit | #Q13616 | 8454 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:50 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

## Specificity / Sensitivity

The CUL1 Antibody detects endogenous levels of CUL1 protein.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues of human CUL1. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Ubiquitin can be covalently linked to many cellular proteins by the ubiquitination process, which targets proteins for degradation by the 26S proteasome. Three components are involved in the target protein-ubiquitin conjugation process. Ubiquitin is first activated by forming a thiolester complex with the activation component E1; the activated ubiquitin is subsequently transferred to the ubiquitin-carrier protein E2, then from E2 to ubiquitin ligase E3 for final delivery to the epsilon-NH2 of the target protein lysine residue (1-3). Combinatorial interactions of different E2 and E3 proteins result in substrate specificity (4). Recent data suggest that activated E2 associates transiently with E3, and that the dissociation is a critical step for ubiqitination (5). Cullin homolog 1 (CUL1), the mammalian homolog of Cdc53 from yeast, is a molecular scaffold of the SCF (Skp1/CUL1/F-box) E3 ubiquitin ligase protein complex. Thus, CUL1 and its family members function in ubiquitin dependent proteolysis (6). In particular, CUL1 has been shown to mediate ubiquitin dependent degradation of p21 Waf1/Cip1, cyclin D and IkappaB-alpha (7,8).

## Background References

1. Ciechanover, A. (1998) *EMBO J.* 17, 7151-7160.
2. Hochstrasser, M. (2000) *Nat Cell Biol.* 2, E153-E157.
3. Hochstrasser, M. (2000) *Science* 289, 563-564.
4. DeSalle, L.M. and Pagano, M. (2001) *FEBS Lett.* 490, 179-189.
5. Deffenbaugh, A. E. et al. (2003) *Cell* 114, 611-622.
6. Pan, Z. Q. et al. (2004) *Oncogene.* 23, 1985-1997.
7. Yu, Z. K. et al. (1998) *Proc Natl Acad Sci.* 95, 11324-11329.
8. Read, M. A. et al. (2000) *Mol Cell Biol.* 20, 2326-2333.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**WB:** Western Blotting **IP:** Immunoprecipitation

## Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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