

#3386 Store at -20°C

# CDT1 Antibody

✓ 100 µl  
(10 Western mini-blot)

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com  
**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com  
**Web** ■ www.cellsignal.com

New 11/08

This product is for *in vitro* research use only and is not intended for use in humans or animals.  
This product is not intended for use as a therapeutic or in diagnostic procedures.

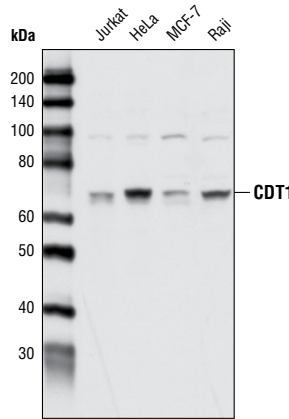
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H	65 kDa	Rabbit**

**Background:** The initiation of DNA replication in mammalian cells is a highly coordinated process that ensures duplication of the genome only once per cell division cycle. Origins of replication are dispersed throughout the genome, and their activities are regulated via the sequential binding of pre-replication and replication factors. The origin recognition complex (ORC) is thought to be bound to chromatin throughout the cell cycle (1,2). The pre-replication complex (Pre-RC) forms in late mitosis/early G1 phase beginning with the binding of CDT1 and cdc6 to the origin, which allows binding of the heterohexameric MCM2-7 complex. The MCM complex is thought to be the replicative helicase, and formation of the pre-RC is referred to as chromatin licensing. Subsequent initiation of DNA replication requires the activation of the S-phase promoting kinases CDK2 and cdc7. Cdc7, which is active only in complex with its regulatory subunit dbf4, phosphorylates MCM proteins bound to chromatin and allows binding of the replication factor cdc45 and DNA polymerase (3,4).

Binding of CDT1 to geminin prevents pre-RC formation, and expression and degradation of geminin serve to regulate CDT1 activity (reviewed in 5). The interaction of CDT1 with MCM proteins is important in pre-RC formation and licensing (6-7) Both cdc6 and CDT1 are degraded by the ubiquitin proteasome pathway in response to DNA damage associated with re-replication (8).

**Specificity/Sensitivity:** CDT1 Antibody detects endogenous levels of total CDT1 protein.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the amino terminal sequence of human CDT1.



Western blot analysis of extracts from various cell types using CDT1 Antibody.

### Background References:

- (1) Okuno, Y. et al. (2001) *EMBO J* 20, 4263–77.
- (2) McNairn, A.J. et al. (2005) *Exp Cell Res* 308, 345–56.
- (3) Bell, S.P. and Dutta, A. (2002) *Annu Rev Biochem* 71, 333–74.
- (4) Tsuji, T. et al. (2006) *Mol Biol Cell* 17, 4459–72.
- (5) Tada, S. (2007) *Front Biosci* 12, 1629–41.
- (6) You, Z. and Masai, H. (2008) *J Biol Chem* 283, 24469–77.
- (7) Teer, J.K. and Dutta, A. (2008) *J Biol Chem* 283, 6817–25.
- (8) Hall, J.R. et al. (2008) *J Biol Chem* 283, 25356–63.

Entrez-Gene ID #81620  
Swiss-Prot Acc. #Q9H211

**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.

\*Species cross-reactivity is determined by Western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

### Recommended Antibody Dilutions:

Western blotting 1:1000

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

### Companion Products:

- MCM2 Antibody #4007
- MCM3 Antibody #4012
- MCM7 Antibody #4018
- ORC2 (3G6) Rat mAb #4736
- ORC6 (3A4) Rat mAb #4737
- Phototope®-HRP Western Blot Detection System, Anti-rabbit IgG, HRP-linked Antibody #7071
- Anti-rabbit IgG, HRP-linked Antibody #7074
- Prestained Protein Marker, Broad Range (Premixed Format) #7720
- Biotinylated Protein Ladder Detection Pack #7727
- 20X LumiGLO® Reagent and 20X Peroxide #7003

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

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

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebra fish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.