

**Cdc45 (D7G6) Rabbit mAb**

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H M R Mk	Endogenous	65	Rabbit IgG	#O75419	8318

**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:100  
1:50

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity/Sensitivity**

Cdc45 (D7G6) Rabbit mAb recognizes endogenous levels of total cdc45 protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human cdc45 protein.

**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 bind to chromatin throughout the cell cycle (1,2). The pre-replication complex (Pre-RC) forms in late mitosis/early G1 phase 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 phosphorylates MCM proteins bound to chromatin and, in conjunction with CDT1, recruits the replication factor cdc45 (3-5). Cdc45 is required for formation of pre-initiation complexes at the G1/S transition and for activation of replication origins. The level of cdc45 protein expression is associated with the proliferative status of the cell or tissue. Terminally differentiated and senescent cells lack cdc45 and highly proliferative cell lines express high levels of cdc45 (6).

**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. Ballabeni, A. et al. (2009) *J Biol Chem* 284, 3028-36.
6. Pollok, S. et al. (2007) *FEBS J* 274, 3669-84.

**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**

**W:** Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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