Revision 1

Store at -20C

#13381

Artemis (D7O8V) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H Mk	Endogenous	90	Rabbit IgG	#Q96SD1	64421

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200

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

Artemis (D7O8V) Rabbit mAb recognizes endogenous levels of total artemis protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro367 of human artemis protein.

Background

DNA double-strand breaks (DSBs) are potentially hazardous lesions that can be induced by ionizing radiation (IR), radiomimetic chemicals, or DNA replication inhibitors. Cells recognize and repair DSBs via two distinct but partly overlapping signaling pathways, nonhomologous end joining (NHEJ) and homologous recombination (HR). DNA repair via the HR pathway is restricted to S and G2 phases of the cell cycle, while NHEJ can occur during any phase. Defects in both pathways have been associated with human disease, including cancer (1).

Artemis is a ubiquitously expressed NHEJ factor that exhibits endonuclease activity. Artemis functions in DNA repair by promoting nonhomologous end joining (2), as well as in cell cycle checkpoint control through ATM/ATR signaling (3).

NHEJ machinery is also utilized in V(D)J recombination, a process that generates diversity in immunoglobulin and T cell receptor genes, and artemis is a key factor in this process (4,5). Mutations in the corresponding artemis gene (*DCLRE1C*) are associated with a radiosensitive type of severe combined immunodeficiency (SCID) in humans (6,7).

Background References

1. Hartlerode, A.J. and Scully, R. (2009) *Biochem J* 423, 157-68.
2. Kurosawa, A. et al. (2013) *PLoS One* 8, e72253.
3. Zhang, X. et al. (2004) *Mol Cell Biol* 24, 9207-20.
4. Mansilla-Soto, J. and Cortes, P. (2003) *J Exp Med* 197, 543-7.
5. Ma, Y. et al. (2002) *Cell* 108, 781-94.
6. Noordzij, J.G. et al. (2003) *Blood* 101, 1446-52.
7. Li, L. et al. (2002) *J Immunol* 168, 6323-9.

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

Cross-Reactivity Key

H: Human **Mk:** Monkey

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