

E-Ras (D5G5J) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	M	Endogenous	24	Rabbit IgG	#Q7Z444	3266

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

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

E-Ras (D5G5J) Rabbit mAb recognizes endogenous levels of total mouse E-Ras protein. It recognizes transfected levels of human E-Ras protein. This antibody does not cross-react with human H-, K-, N-, or R-Ras proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala30 of human E-Ras protein.

Background

E-Ras (Embryonic Ras) is a member of the Ras family that includes K-Ras, N-Ras, and H-Ras. E-Ras is expressed in early mouse blastocysts and murine embryonic stem cells and is down-regulated upon differentiation (1). Amino acid substitutions as a result of mutation at three conserved positions in K-, H-, N-, and R-Ras proteins result in constitutive activation of these small GTPases, and oncogenic transformation. Intriguingly, the *Eras* gene encodes a protein where each of these amino acids are substituted, and so E-Ras is naturally constitutively active. E-Ras is thought to contribute to the tumorigenic potential of mouse ES cells to form teratomas in immunodeficient or isogenic mice (1). Despite the parallels between oncogenic mutated Ras, major differences in signaling exist between H-Ras G12V and E-Ras. While H-Ras G12V highly activates the MAPK pathway, E-Ras cannot bind to Raf1 to activate this pathway. Instead, E-Ras signals through PI3K to activate Akt (1). E-Ras is not expressed in human embryonic stem cells, nor is it expressed in any adult tissues as found thus far (2). Reports have suggested it may be expressed in several tumor types, including gastric cancer (1,2,3). Researchers have speculated on the role of E-Ras in the early mouse blastocyst. Preimplantation embryos can survive in tissue culture in defined medium until the blastocyst stage without any requirement for serum or growth factors. Preimplantation embryos have a requirement for PI3K signaling, and in the absence of exogenous signals, E-Ras has been suggested to be the effector of this signal transduction (6).

Background References

1. Takahashi, K. et al. (2003) *Nature* 423, 541-5.
2. Kameda, T. and Thomson, J.A. (2005) *Stem Cells* 23, 1535-40.
3. Kaizaki, R. et al. (2009) *Anticancer Res* 29, 2189-93.
4. Kubota, E. et al. (2010) *Am J Pathol* 177, 955-63.
5. Liu, Y. et al. (2013) *Oncol Rep* 30, 50-6.
6. Gross, V.S. et al. (2005) *Mol Reprod Dev* 70, 324-32.

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

Cross-Reactivity Key

M: Mouse

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