Revision 1

Store at -20C

#64616

Phospho-FoxO3a (Ser425) (D5E9T) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H Mk	Endogenous	82-97	Rabbit IgG	#O43524	2309

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, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-FoxO3a (Ser425) (D5E9T) Rabbit mAb recognizes endogenous levels of FoxO3a protein only when phosphorylated at Ser425. This antibody does not cross-react with FoxO1 nor FoxO4 proteins. This antibody may detect a non-specific band at 65 kDa and at 240 kDa.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser425 of human FoxO3a protein.

Background

The Forkhead family of transcription factors is involved in tumorigenesis of rhabdomyosarcoma and acute leukemias (1-3). Within the family, three members (FoxO1, FoxO4, and FoxO3a) have sequence similarity to the nematode orthologue DAF-16, which mediates signaling via a pathway involving IGFR1, PI3K, and Akt (4-6). Active forkhead members act as tumor suppressors by promoting cell cycle arrest and apoptosis. Increased expression of any FoxO member results in the activation of the cell cycle inhibitor p27 Kip1. Forkhead transcription factors also play a part in TGF-β-mediated upregulation of p21 Cip1, a process negatively regulated through PI3K (7). Increased proliferation results when forkhead transcription factors are inactivated through phosphorylation by Akt at Thr24, Ser256, and Ser319, which results in nuclear export and inhibition of transcription factor activity (8). Forkhead transcription factors can also be inhibited by the deacetylase sirtuin (SirT1) (9).
ERK phosphorylates FoxO3a at Ser425, degrading FoxO3a via the ubiquitin-proteasome pathway. Research has shown that this phosphorylation event inhibits FoxO3a's function to induce cell death and thus promotes cell proliferation and tumorigenesis (10, 11).

Background References

1. Anderson, M.J. et al. (1998) *Genomics* 47, 187-99.
2. Galili, N. et al. (1993) *Nat Genet* 5, 230-5.
3. Borkhardt, A. et al. (1997) *Oncogene* 14, 195-202.
4. Nakae, J. et al. (1999) *J Biol Chem* 274, 15982-5.
5. Rena, G. et al. (1999) *J Biol Chem* 274, 17179-83.
6. Guo, S. et al. (1999) *J Biol Chem* 274, 17184-92.
7. Seoane, J. et al. (2004) *Cell* 117, 211-23.
8. Arden, K.C. (2004) *Mol Cell* 14, 416-8.
9. Yang, Y. et al. (2005) *EMBO J* 24, 1021-32.
10. Brunet, A. et al. (2004) *Science* 303, 2011-5.
11. Yang, J.Y. et al. (2008) *Nat Cell Biol* 10, 138-48.

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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