

**FoxO3a (D7D3Y) Mouse mAb**

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<b>Applications:</b> W, IP, IF-IC	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 82 to 97	<b>Source/Isotype:</b> Mouse IgG1	<b>UniProt ID:</b> #O43524	<b>Entrez-Gene Id:</b> 2309
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**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:50  
1:800

**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**

FoxO3a (D7D3Y) Mouse mAb detects exogenous and endogenous levels of total FoxO3a protein. The antibody does not detect the exogenously expressed family members FoxO1 or FoxO4.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly381 of human FoxO3a.

**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).

**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.

**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 nonfat dry milk, 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

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