

#5538 Store at -20C

Phospho-FoxO3a (Ser294) Antibody


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

Applications: WB, IP	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 82 to 97	Source: Rabbit	UniProt ID: #O43524	Entrez-Gene Id: 2309
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Product Usage Information	Application Western Blotting Immunoprecipitation	Dilution 1:1000 1:50
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	Phospho-FoxO3a (Ser294) Antibody detects exogenous and endogenous levels of FoxO3a protein only when phosphorylated at serine 294.	
Species predicted to react based on 100% sequence homology:	Chicken	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide surrounding Ser294 of human FoxO3a. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>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 IGF1R, 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).</p> <p>Erk phosphorylates FoxO3a at Ser294, Ser344 and Ser425, resulting in degradation of FoxO3a through the MDM2-mediated ubiquitin-proteasome pathway. Thus, Erk promotes proliferation and tumor progression by inhibiting FoxO3a (10).</p>	
Background References	<ol style="list-style-type: none"> Anderson, M.J. et al. (1998) <i>Genomics</i> 47, 187-99. Galili, N. et al. (1993) <i>Nat Genet</i> 5, 230-5. Borkhardt, A. et al. (1997) <i>Oncogene</i> 14, 195-202. Nakae, J. et al. (1999) <i>J Biol Chem</i> 274, 15982-5. Rena, G. et al. (1999) <i>J Biol Chem</i> 274, 17179-83. Guo, S. et al. (1999) <i>J Biol Chem</i> 274, 17184-92. Seoane, J. et al. (2004) <i>Cell</i> 117, 211-23. Arden, K.C. (2004) <i>Mol Cell</i> 14, 416-8. Yang, Y. et al. (2005) <i>EMBO J</i> 24, 1021-32. Yang, J.Y. et al. (2008) <i>Nat Cell Biol</i> 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	WB: Western Blotting IP: Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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