

**#2487**  
 Store at -20°C

# Phospho-FoxO1 (Ser319)/FoxO4 (Ser262) Antibody

100 µl  
 (10 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Transfected	H	65 kDa (FoxO4) 120 kDa (GFP-FoxO1)	Rabbit**

**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 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 p27Kip1. Forkhead transcription factors also play a part in TGF-β-mediated upregulation of p21CIP1, 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).

**Specificity/Sensitivity:** Phospho-FoxO1 (Ser319)/FoxO4 (Ser262) Antibody detects exogenous levels of FoxO1 only when phosphorylated at serine 319 and exogenous levels of FoxO4 only when phosphorylated at serine 262. The antibody does not cross-react with FoxO1 phosphorylated at other sites, FoxO4 phosphorylated at other sites nor with FoxO3a phosphorylated at any sites.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser262 of human FoxO4. Antibodies are purified by protein A and peptide affinity chromatography.

**Entrez-Gene ID #** 2308  
**Swiss-Prot Acc. #** Q12778

**SStorage:** 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.

**\*Species cross-reactivity is determined by western blot.**

**\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**

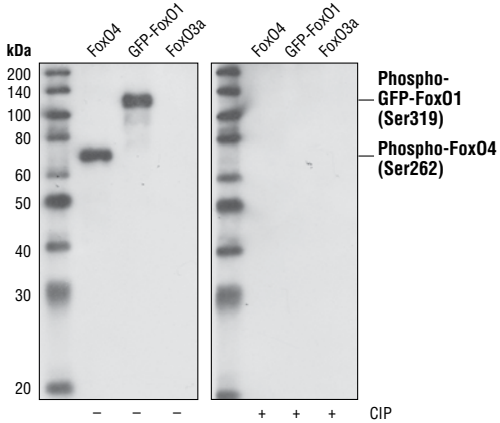
Western blotting 1:1000

**For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

**Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.**

**Background References:**

- (1) Anderson, M.J. et al. (1998) *Genomics* 47, 187-199.
- (2) Galili, N. et al. (1993) *Nat. Genet.* 5, 230-235.
- (3) Borkhardt, A. et al. (1997) *Oncogene* 14, 195-202.
- (4) Nakae, J. et al. (1999) *J. Biol. Chem.* 274, 15982-15985.
- (5) Rena, G. et al. (1999) *J. Biol. Chem.* 274, 17179-17183.
- (6) Guo, S. et al. (1999) *J. Biol. Chem.* 274, 17184-17192.
- (7) Seoane, J. et al. (2004) *Cell* 117, 211-223.
- (8) Arden, K.C. (2004) *Mol. Cell* 14, 416-418.
- (9) Yang, Y. et al. (2005) *EMBO J.* 24, 1021-1032.



Western blot analysis of extracts from serum-treated COS-7 cells exogenously expressing FoxO4 or FoxO3a, using Phospho-FoxO1 (Ser319)/FoxO4 (Ser262) Antibody. The phospho-specificity of the antibody was verified by treating the membrane with (+) or without (-) calf intestinal phosphatase (CIP) after western transfer.

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey 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 All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.