

# Phospho-FoxO4 (Ser193) Antibody

✓ 100 µl  
(10 western blots)

Orders ■ 877-616-CELL (2355)  
orders@cellsignal.com

Support ■ 877-678-TECH (8324)  
info@cellsignal.com

Web ■ www.cellsignal.com

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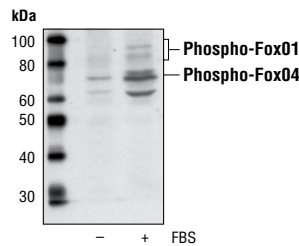
This product is for *in vitro* research use only and is not intended for use in humans or animals.  
This product is not intended for use as a therapeutic or in diagnostic procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, Hm	70 kDa	Rabbit**

**Background:** The Forkhead family of transcription factors is involved in tumorigenesis in 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). There are three Akt phosphorylation sites in the FKHR proteins: Thr24, Ser256 and Ser319. Phosphorylation of FKHR family members at these sites by Akt promotes cell survival and regulates the cell cycle. Phosphorylation of FKHR proteins regulates their nuclear translocation and target gene transcription (7,8).

**Specificity/Sensitivity:** Phospho-FoxO4 (Ser193) Antibody detects endogenous levels of FoxO4 only when phosphorylated at serine 193. The antibody may detect phospho-FoxO1 at 82 kDa.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to residues surrounding Ser256 of human FoxO1. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from COS cells, serum-starved or with serum treatment, using Phospho-FoxO4 (Ser193) Antibody.

#### Selected Application References:

Medema, R.H. et al. (2000) AFX-like Forkhead transcription factors mediate cell-cycle regulation by Ras and PKB through p27kip1. *Nature* 404, 782-787. Application: W.

#### 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) Brunet, A. et al. (1999) *Cell* 96, 857-868.
- (8) Medema, R.H. (2000) *Nature* 404, 782-787.

Entrez-Gene ID #4303  
Swiss-Prot Acc. #P98177

**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.

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

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

#### Recommended Antibody Dilutions:

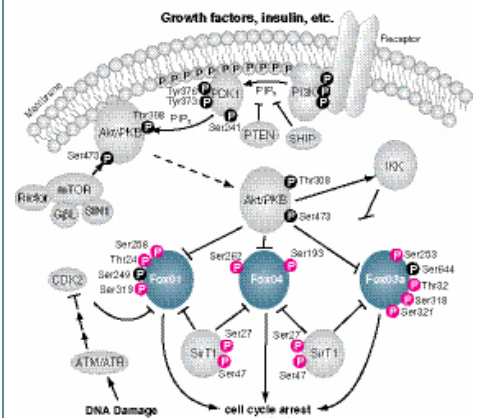
Western blotting 1:1000

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.
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- (8) Medema, R.H. (2000) *Nature* 404, 782-787.



**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—ELISA 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 All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.