FoxO3a (D19A7) Rabbit mAb

**Applications**
- Western
- IP
- IHC-P
- IF-IC
- F
- Endogenous

**Species Cross-Reactivity**
- H, M, R
- Endogenous

**Molecular Wt.**
- 82-87 kDa

**Isotype**
- Rabbit IgG**

**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 p27Kip1. 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).

**Specificity/Sensitivity:**
FoxO3a (D19A7) Rabbit mAb recognizes endogenous levels of total FoxO3a protein.

**Source/Purification:**
Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the carboxy terminus of human FoxO3 protein.

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunoprecipitation: 1:50
- Immunohistochemistry (Paraffin): 1:1600-1:6400
- Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.

**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.

**Recommended Companion Products:**
For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

**Background References:**
(9) Yang, Y. et al. (2005) EMBO J. 24, 1021-1032.

**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.

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Immunohistochemical analysis of paraffin-embedded human breast carcinoma using FoxO3a (D19A7) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human prostate carcinoma using FoxO3a (D19A7) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded metastatic SKOV3 tumor in mouse lung using FoxO3a (D19A7) Rabbit mAb. Note nuclear staining in adjacent normal lung.

Flow cytometric analysis of MRK-nu-1 cells (blue) and Jurkat cells (green) using FoxO3a Rabbit mAb (solid line) compared to a concentration-matched Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (dashed line). Anti-rabbit IgG (H+L), F(ab’)2 Fragment (Alexa Fluor® 488 Conjugate) #4412 was used as a secondary antibody.

Immunohistochemical analysis of paraffin-embedded PC-3 (upper) and MRK-nu-1 (lower) cell pellets, treated with Human Insulin-like Growth Factor I (hIGF-I) #8917 (left) or LY294002 #9901 (right), using FoxO3a (D19A7) Rabbit mAb.