Revision 5

Store at -20C

#92324

ACTL6A/BAF53A (E3W2A) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, ChIP, C&R	H Mk	Endogenous	45	Rabbit IgG	#O96019	86

Product Usage Information

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 × 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Chromatin IP	1:50
CUT&RUN	1:50

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

ACTL6A/BAF53A (E3W2A) Rabbit mAb recognizes endogenous levels of total ACTL6A/BAF53A protein. This antibody does not cross-react with ACTL6B/BAF53B.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly61 of human ACTL6A/BAF53A protein.

Background

The modulation of chromatin structure is an essential component in the regulation of transcriptional activation and repression. Modifications can be made by at least two evolutionarily conserved strategies, through the disruption of histone-DNA contacts by ATP-dependent chromatin remodelers, or by histone tail modifications including methylation and acetylation. One of the four classes of ATP-dependent histone remodelers is the SWI/SNF complex, the central catalytic subunit of which is Brg1 or the highly related protein hBRM (1). This SWI/SNF complex contains varying subunits but its association with either Brg1 or hBRM remains constant (1). SWI/SNF complexes have been shown to regulate gene activation, cell growth, the cell cycle, and differentiation (1). Brg1/hBRM have been shown to regulate transcription through enhancing transcriptional activation of glucocorticoid receptors (2). Although usually associated with transcriptional activation, Brg1/hBRM have also been found in complexes associated with transcriptional repression, including HDACs, Rb, and Tif1β (3-5). Brg1/hBRM plays a vital role in the regulation of gene transcription during early mammalian embryogenesis. In addition, Brg1/hBRM also plays a role as a tumor suppressor and Brg1 is mutated in several tumor cell lines (6-8).

ACTL6/BAF53 proteins are highly homologous, actin-related proteins found in the SWI/SNF complex (9). In addition to the canonical SWI/SNF complex, ACT6LA/BAF53A is also a member of the embryonic SWI/SNF complex, known as esBAF, which plays a role in pluripotency and development (10-12). ACTL6B/BAF53B is a member of the neural-specific SWI/SNF complex that facilitates binding to target genes and is involved in memory and synaptic plasticity (13-15). ACTL6/BAF53 has been shown to interact with c-Myc, where it functions as a cofactor and is important in the transformation process (16). Further studies have shown ACTL6/BAF53 is associated with EMT and transformation in various cancers (17,18).

Background References

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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 **ChIP:** Chromatin IP **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **Mk:** Monkey

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Limited Uses