

HBO1 (G-2): sc-398346

BACKGROUND

In the cell, transcription is regulated in part by the histone modification of chromatin. Specifically, histone acetyltransferase proteins and their associated complexes function with co-activators to regulate transcription. One family of histone acetyltransferases is the MYST family of transcriptional silencers, which is linked to ORC (origin recognition complex) function. The ORC is an initiator protein for DNA replication and mediates the acetylation of chromatin to control both DNA replication and gene expression. HBO1 (histone acetyltransferase binding to ORC) is a MYST family protein that interacts with ORC1, the largest subunit of the human ORC complex. HBO1 is a nuclear protein that is highly expressed in human testis. In addition to binding ORC, HBO1 represses AR (androgen receptor)-mediated transcription by binding AR through its N-terminal transcriptional repression domain. HBO1 may play a role in regulating AR-dependent gene transcription in normal and prostate cancer cells.

REFERENCES

1. Iizuka, M. and Stillman, B. 1999. Histone acetyltransferase HBO1 interacts with the ORC1 subunit of the human initiator protein. *J. Biol. Chem.* 274: 23027-23034.
2. Sharma, M., et al. 2000. Androgen receptor interacts with a novel MYST protein, HBO1. *J. Biol. Chem.* 275: 35200-35208.
3. Zong, H., et al. 2005. Cyclin-dependent kinase 11^{p58} interacts with HBO1 and enhances its histone acetyltransferase activity. *FEBS Lett.* 579: 3579-3588.

CHROMOSOMAL LOCATION

Genetic locus: KAT7 (human) mapping to 17q21.33; Kat7 (mouse) mapping to 11 D.

SOURCE

HBO1 (G-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 20-47 near the N-terminus of HBO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HBO1 (G-2) is available conjugated to agarose (sc-398346 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398346 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398346 PE), fluorescein (sc-398346 FITC), Alexa Fluor® 488 (sc-398346 AF488), Alexa Fluor® 546 (sc-398346 AF546), Alexa Fluor® 594 (sc-398346 AF594) or Alexa Fluor® 647 (sc-398346 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398346 AF680) or Alexa Fluor® 790 (sc-398346 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398346 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

HBO1 (G-2) is recommended for detection of HBO1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

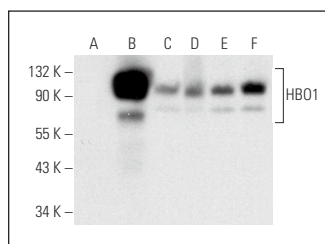
HBO1 (G-2) is also recommended for detection of HBO1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HBO1 siRNA (h): sc-35530, HBO1 siRNA (m): sc-35531, HBO1 shRNA Plasmid (h): sc-35530-SH, HBO1 shRNA Plasmid (m): sc-35531-SH, HBO1 shRNA (h) Lentiviral Particles: sc-35530-V and HBO1 shRNA (m) Lentiviral Particles: sc-35531-V.

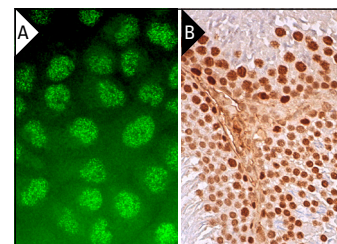
Molecular Weight of HBO1: 83 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HBO1 (h): 293T Lysate: sc-115259 or HeLa whole cell lysate: sc-2200.

DATA



HBO1 (G-2): sc-398346. Western blot analysis of HBO1 expression in non-transfected 293T: sc-117752 (A), human HBO1 transfected 293T: sc-115259 (B) and HeLa (C) whole cell lysates and A-673 (D), HeLa (E) and A-431 (F) nuclear extracts.



HBO1 (G-2): sc-398346. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat testis tissue showing nuclear staining of cells in seminiferous ducts and Leydig cells (B).

SELECT PRODUCT CITATIONS

1. Frontini-López, Y.R., et al. 2021. 14-3-3β isoform is specifically acetylated at Lys51 during differentiation to the osteogenic lineage. *J. Cell. Biochem.* 122: 1767-1780.
2. Yang, Z., et al. 2024. The ORFIUS complex regulates ORC2 localization at replication origins. *NAR Cancer* 6: zcae003.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.