

MDM2 (D-7): sc-13161

BACKGROUND

p53 is the most commonly mutated gene in human cancer identified to date. Expression of p53 leads to inhibition of cell growth by preventing progression of cells from G₁ to S phase of the cell cycle. Most importantly, p53 functions to cause arrest of cells in the G₁ phase of the cell cycle following any exposure of cells to DNA-damaging agents. The MDM2 (murine double minute 2) protein was initially identified as an oncogene in a murine transformation system. MDM2 functions to bind p53 and block p53-mediated transactivation of cotransfected reporter constructs. The MDM2 gene is amplified in a high percentage of human sarcomas that retain wildtype p53 and tumor cells that overexpress MDM2 can tolerate high levels of p53 expression. These findings argue that MDM2 overexpression represents at least one mechanism by which p53 function can be abrogated during tumorigenesis.

REFERENCES

1. Kastan, M.B., et al. 1991. Participation of p53 protein in the cellular response to DNA damage. *Cancer Res.* 51: 6304-6311.
2. Kastan, M.B., et al. 1992. A mammalian cell cycle checkpoint pathway utilizing p53 and GADD 45 is defective in ataxia-telangiectasia. *Cell* 71: 587-597.
3. Oliner, J.D., et al. 1993. Oncoprotein MDM2 conceals the activation domain of tumor suppressor p53. *Nature* 362: 857-860.

CHROMOSOMAL LOCATION

Genetic locus: MDM2 (human) mapping to 12q15; Mdm2 (mouse) mapping to 10 D2.

SOURCE

MDM2 (D-7) is a mouse monoclonal antibody raised against amino acids 100-320 of MDM2 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.

MDM2 (D-7) is available conjugated to agarose (sc-13161 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13161 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13161 PE), fluorescein (sc-13161 FITC), Alexa Fluor® 488 (sc-13161 AF488), Alexa Fluor® 546 (sc-13161 AF546), Alexa Fluor® 594 (sc-13161 AF594) or Alexa Fluor® 647 (sc-13161 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13161 AF680) or Alexa Fluor® 790 (sc-13161 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, MDM2 (D-7) is available conjugated to TRITC (sc-13161 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

MDM2 (D-7) is recommended for detection of MDM2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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).

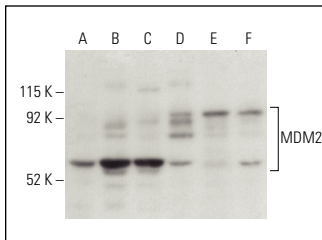
Suitable for use as control antibody for MDM2 siRNA (h): sc-29394, MDM2 siRNA (m): sc-37263, MDM2 siRNA (r): sc-63266, MDM2 shRNA Plasmid (h): sc-29394-SH, MDM2 shRNA Plasmid (m): sc-37263-SH, MDM2 shRNA Plasmid (r): sc-63266-SH, MDM2 shRNA (h) Lentiviral Particles: sc-29394-V, MDM2 shRNA (m) Lentiviral Particles: sc-37263-V and MDM2 shRNA (r) Lentiviral Particles: sc-63266-V.

Molecular Weight of MDM2: 90 kDa.

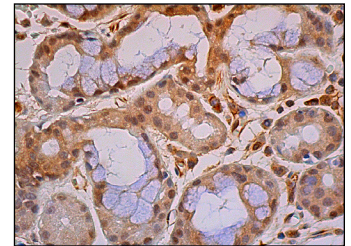
Molecular Weight of MDM2 cleavage product: 60 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295, A-673 cell lysate: sc-2414 or Jurkat whole cell lysate: sc-2204.

DATA



MDM2 (D-7): sc-13161. Western blot analysis of MDM2 expression in HEK293T (A), U-2 OS (B), A-673 (C), Jurkat (D), MCF7 (E) and A549 (F) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



MDM2 (D-7): sc-13161. Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Arva, N.C., et al. 2005. A chromatin-associated and transcriptionally inactive p53-MDM2 complex occurs in MDM2 SNP309 homozygous cells. *J. Biol. Chem.* 280: 26776-26787.
2. Rangel, L.P., et al. 2019. p53 reactivation with induction of massive apoptosis-1 (PRIMA-1) inhibits amyloid aggregation of mutant p53 in cancer cells. *J. Biol. Chem.* 294: 3670-3682.
3. Calabrese, C., et al. 2020. Deferasirox-dependent iron chelation enhances mitochondrial dysfunction and restores p53 signaling by stabilization of p53 family members in leukemic cells. *Int. J. Mol. Sci.* 21: 7674.
4. Tsuda, Y., et al. 2021. Nuclear expression of MDM2 in hibernoma: a potential diagnostic pitfall. *Virchows Arch.* 478: 527-534.

RESEARCH USE

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