

MDM2

Mouse Double Minute 2
human, recombinant, *E. coli*

Cat. No.	Amount
PR-843	10 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -80°C

Avoid freeze / thaw cycles

Form

Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT and 20% glycerol.

Activity

20-200 ng are sufficient for an *in vitro* transcription assay and 100 ng are sufficient for a protein-protein interaction assay.

Application

Use only for research. MDM2 can be applied in *in vitro* transcription assays, DNA-protein and protein-protein interaction assays.

Molecular Weight

54 kDa

Purity

> 95% by SDS-PAGE

Description

The His tagged recombinant MDM2 was expressed in *E. coli* and purified by affinity and FPLC chromatography. Originally discovered as one of three genes amplified on double minute chromosomes in a tumorigenic derivative of NIH 3T3 cells, MDM2 was later shown to possess oncogenic potential when overexpressed. High-level expression of MDM2 has also been shown to confer tumorigenic potential upon nontransformed rodent fibroblasts in athymic nude mice. MDM2 can immortalize rat embryo fibroblasts and can cooperate with activated RAS to transform these cells. Elevated levels of MDM2 protein have been found in a variety of human tumors, most notably in soft tissue sarcomas where up to 30% of primary tumors contain multiple copies of the MDM2 gene. One mechanism by which MDM2 overexpression promotes tumor development is through its ability to bind to the p53 tumor suppressor, thereby blocking the transactivation, cell cycle arrest, and apoptotic functions of p53. MDM2 can inhibit p53 activity in a number of ways including preventing p53 from recruiting TAFs, promoting nuclear export, inhibiting p53 acetylation, and perhaps most importantly by virtue of its function as an E3 ubiquitin ligase with specificity for, among others, p53. In addition to regulating p53 levels by targeting p53 for proteasomal degradation MDM2 also transfers ubiquitin to itself, MDMX, the β 2 adrenergic receptor, glucocorticoid receptor, TIP60, and PCAF.

Selected References:

- Bond *et al.* (2005) MDM2 is a central node in the p53 pathway: 12 years and counting. *Current Cancer Drug Targets* **5**:3.
- Dornan *et al.* (2004) The ubiquitin ligase COP1 is a critical negative regulator of p53. *Nature* **429**:86.
- Chen *et al.* (1996) mdm-2 inhibits the G1 arrest and apoptosis functions of the p53 tumor suppressor protein. *Mol. Cell. Biol.* **16**:2445.
- Oliner *et al.* (1993) Oncoprotein MDM2 conceals the activation domain of tumour suppressor p53. *Nature* **362**:857.
- Finlay, C. A. (1993) The mdm-2 oncogene can overcome wild-type p53 suppression of transformed cell growth. *Mol. Cell. Biol.* **13**:301.
- Leach *et al.* (1993) p53 Mutation and MDM2 amplification in human soft tissue sarcomas. *Cancer Res.* **53**:2231.
- Oliner *et al.* (1992) Amplification of a gene encoding a p53-associated protein in human sarcomas. *Nature* **358**:80.
- Momand *et al.* (1992) The mdm-2 oncogene product forms a complex with the p53 protein and inhibits p53-mediated transactivation. *Cell* **69**:1237.



MDM2

Mouse Double Minute 2

human, recombinant, *E. coli*

Fakharzadeh *et al.* (1991) Tumorigenic potential associated with enhanced expression of a gene that is amplified in a mouse tumor cell line. *EMBO J.* **10**:1565.

Cahilly-Snyder *et al.* (1987) Molecular analysis and chromosomal mapping of amplified genes isolated from a transformed mouse 3T3 cell line. *Somat. Cell Mol. Genet.* **13**:235.