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Inspiration for Life Science

MONOCLONAL ANTIBODY

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Catalog No. BAM-71-131-EX

Anti-p53 acetyl-K120

BACKGROUND

p53 mutants are found in more than half of human cancers and are considered as the most important human cancer related gene. p53 is detected at 53kD position by electrophoresis and is composed of 393 amino acids. In the unstressed normal cells, the p53 level is low and it is inactive. However, with stress, especially with DNA damage, it is activated to promote arrest of cell cycle and repair of DNA damage, or induction of apoptosis. The functions and stability of p53 are regulated by phosphorylation of serine and threonine, and acetylation of lysine at various sites in the molecule.

Acetylation of lysine 120 (acetyl-K120) of p53 occurs rapidly after DNA damage and is catalyzed by the MYST family acetyltransferases hMOF and TIP60, and activates transcription of proapoptotic genes, BAX and PUMA (ref 1, 2 & 3).This product is the purified IgG fraction obtained from serum-free culture medium of mouse hybridoma (clone 10E5), which produces monoclonal antibody that specifically recognizes human p53 protein with acetylated Lys120.

Product type	Primary antibodies
Host	Mouse
Source	Serum free culture supernatant monoclonal antibody raised against synthetic peptide containing acetyl-Lys315
Form	Liquid Purified monoclonal antibody (IgG) 1mg/ml in PBS (ph 7.4), 50% glycerol
Volume	50 μg
Concentration	
Specificity	
Antigen	Synthetic peptide containing acetyl-Lys315
Isotype	Mouse IgG1 (κ)

Application notes	WB, ELISA, IP **Recommended use** **Recommended dilutions** Western blotting: (~1 ug/ml)(Fig.1) Optimal dilutions/concentrations should be determined by the end user. Data Link UniProtKB/Swiss-Prot P04637 (P53_HUMAN) **Staining Pattern**
Cross reactivity	
Storage	-20°C (Long period -70°C)
References	This product has been used for the following references. 1. Tyteca S et al “To die or not to die: a HAT trick”Mol Cell 24: 807-808 (2006) PMID: 17189182 2. Tang Y et al “Tip60-dependent acetylation of p53 modulates the decision between cell-cycle arrest and apoptosis” Moll Cell 24: 827-839 (2006) PMID: 17189186 3. Sykes SM “Acetylation of the p53 DNA-binding domain regulates apoptosis induction”

Moll Cell 24: 841-851 (2006) PMID: 17189187
3. Bode AM., Dong Z. “Post-translational modification of p53 in tumorigenesis.” Nature Rev. Cancer 4: 793-805 (2004)

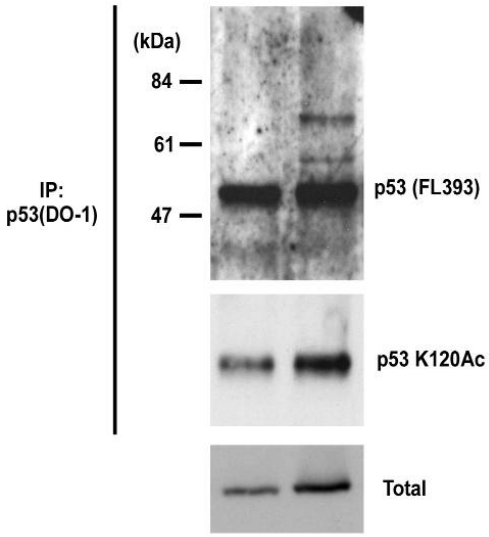

Fig.1 Identification of p53 protein, whose Lys120 is acetylated, by Western blotting with 10E5 monoclonal antibody.
Samples are crude lysates of HCT116 cells: Left lanes are control. Right lanes are cells treated with siRNA to knockdown the expression of a Tip60 interacting protein, which results in increase in acetylation of p53 at Lys120. Total p53 was immuno-precipitated with omnipotent anti-p53 monoclonal antibody (DO-1) from the crude extracts and analyzed by Western blotting with anti-p53 antibody (FL393) (upper panel) or anti-p53 acetyl-K120 monoclonal antibody (10E5) (middle panel). The lower panel shows total p53.

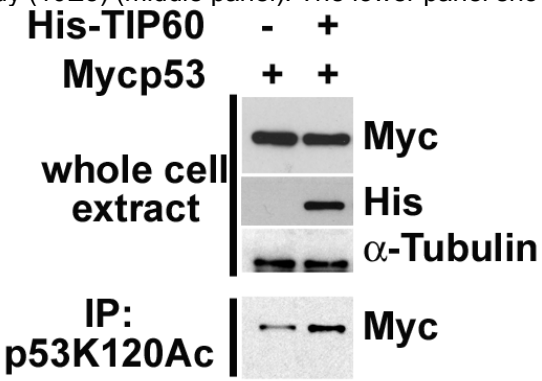

Fig.2 Immunoprecipitation of p53 acetylated at K120 by 10E5 monoclonal antibody.
Crude cell extracts were prepared from H129 cells (p53 negative cell line) expressing only Myc-p53 (first lane), and both Myc-p53 and His-Tip60. In the upper panel, the whole cell extracts were immuno-blotted with anti-Myc, anti-His-tag or anti-αtublin antibodies. In the lower panel, the extracts were immuno-precipitated with anti-p53 Ac-K120 antibody (10E5) and the precipitates were immuno-blotted with anti-Myc antibody. Acetylation of p53 at K120 is dependent on Tip60 and promoted by over-expression of His-Tip60.
The data in the above figures were kindly provided by Dr. T. Habu at Institute for Virus Researh, Kyoto University.

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