DB102: p53 (Pab 240)

Background:

The p53 tumor suppressor gene encodes a transcription factor that contributes to several cellular activities that include apoptosis, transient growth arrest, and sustained growth arrest or senescence (1). Mutations within the p53 gene are found in about half of all human cancers (2). In cells that are functioning normally the MDM2 protein binds to p53 and maintains p53 at low levels by increasing its susceptibility to proteolysis by the 26S proteosome (3). A cell that undergoes stress loses the ability of MDM2 to bind to p53 and as a result p53 levels increase which then leads to cell cycle arrest or apoptosis (3&4). p53 induced cell cycle arrest or apoptosis can be achieved through transcriptional regulation of several genes including the cell cycle inhibitor p21, DNA repair gene GADD45, and the apoptotic inducer Bax (5). Besides MDM2 inactivation, p53 can also be functionally inactivated by mutation or binding to DNA tumor virus encoded proteins, such as SV40 large T antigen, Adenovirus E1B and papilloma virus E6 proteins (6).

Origin:

p53 (Pab 240) is a mouse monoclonal IgG_1 derived by fusion of Sp2 myeloma cells with spleen cells from a mouse immunized with a β galactosidase fusion protein containing a p53 domain corresponding to amino acids 156-214 of mammalian origin.

Product Details:

Each vial contains 100 µg/ml of mouse monoclonal IgG_1 p53 (Pab 240) DB101, in 1 ml PBS containing 0.1 % sodium azide and 0.2% gelatin.

Specificity:

p53 (Pab 240) DB101 reacts with only mutant p53 under non-denaturing conditions, but is equally reactive with mutant and wt p53 under denaturing conditions. Recommended for immunoprecipitation and cell staining, mutant specific. Recommended for Western blotting for both wt and mutant p53. Reactive with p53 of mouse, rat, bovine, avian, and human origin. Western blotting starting dilution: 1:100.
Positive control A431 WCL.

Storage:

Store this product at 4º C, do not freeze. The product is stable for one year from the date of shipment.

References:

1. Bargonetti J, Manfredi JJ. 2002. Multiple Roles of the tumor suppressor p53. Curr Opin Oncol 14(1):86-91
2. Vousden KH. 2002. Activation of the p53 tumor suppressor protein. Biochim Biophys Acta 1602(1):47-59
3. Momand J, Wu HH, Dasgupta G. 2000. MDM2—master regulator of the p53 tumor suppressor protein. Gene 242(1-2):15-29
4. Alarcon-Vargas D, Ronai Z. 2002. p53-MDM2—the affair that never ends. Carcinogenesis 23(4):541-547
5. Gong B, Almasan A. 1999. Differential upregulation of p53-responsive genes by genotoxic stress in hematopoietic cells containing wild-type and mutant p53. Gene Expr 8(4):197-206
6. Kaelin WG Jr. 1999. The emerging p53 gene family. J Natl Cancer Inst 91(7):594-598.

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