



DB039: p53 (I20)

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 proteasome (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 is provided as an affinity purified rabbit polyclonal antibody, raised against a peptide mapping to an internal domain of Human p53.

Product Details:

Each vial contains 200 µg/ml of affinity purified rabbit IgG, p53 *DB039 (I20)*, in 1 ml PBS containing 0.1 % sodium azide and 0.2% gelatin.

Competition Studies:

A blocking peptide is also available, *DB039P*, for use in competition studies. Each vial contains 100 µg of peptide in 0.5 ml PBS with 0.1% sodium azide and 100 µg BSA.

Specificity:

p53 *DB039 (I20)* reacts with p53 of Human origin by western blotting. Western blotting starting dilution: 1:400.

IP and IHC not yet tested.

Storage:

Store this product at 4° 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.