

Anti-p53 phospho-Ser46 antibody, monoclonal (#36)

Catalog #71-115 100 ug

p53 mutants are found in more than half of human cancers and are considered as the most important human cancer related gene. p53 is 53 kDa 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 cell cycle arrest and repair DNA damage, or induction of apoptosis. The functions of p53 are regulated by phosphorylation of serine and threonine, and acetylation of lysine at various sites in the molecule. Among the phosphorylation sites, Ser46 is phosphorylated when DNA damage is so severe as to become unrepairable, leads to apoptosis by activating transcription of proapoptotic genes such as *p53AIP1* (ref 1, 2).

This product is the purified IgG fraction obtained from serum free culture of mouse hybridoma (clone #36) which produces monoclonal antibody that specifically recognizes p53 protein with phosphorylated Ser46 (ref 3).

Applications

- 1) Western blot x1,000~2,000 dilution
- 2) Immunohistochemistry is assay dependent
- 3) ELISA

Other applications have not been tested.

Specification

Antigen: synthetic peptide of Ser46-phosphorylated p53

Isotype: mouse IgG1 (kappa)

Form: purified monoclonal antibody (IgG) 1mg/ml in PBS, 50% glycerol

Reactivity: human p53-phospho-Ser46. Nonspecific background reaction is low (Fig. 1)

Storage: -20 °C, for long term storage, -70°C

Data Link UniProtKB/Swiss-Prot [P04637](#) (P53_HUMAN)

References This product was used in reference 3.

1. Bode AM & Dong Z "Post-translational modification of p53 in tumorigenesis" *Nature Rev Cancer* 4: 793-805 (2004) PMID: [15510160](#)
2. Oda K *et al* "p53AIP1, a potential mediator of p53-dependent apoptosis, and its regulation by Ser-46-phosphorylated p53" *Cell* 102: 849-862 (2000) PMID: [11030628](#)
3. Taira N *et al* "DYRK2 is targeted to the nucleus and controls p53 via Ser46 phosphorylation in the apoptotic response to DNA damage" *Mol. Cell* 25:725-738 (2007) PMID: [17349958](#)

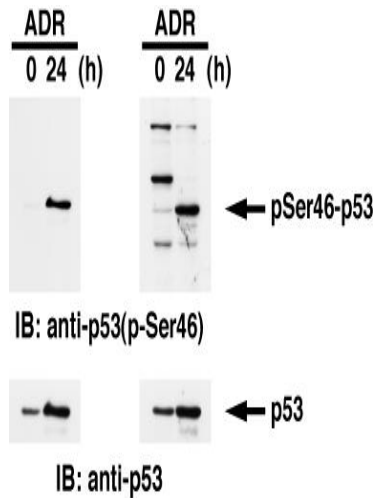


Fig.1 Identification of Ser46-phosphorylated p53 protein by Western blot. Samples: Crude cell extracts of MOLT-4 untreated (left lanes) and treated with adriamycin for 24 h (right lanes). The left panel is the result with our antibody (#71-115) and the right panel with a competitor's antibody. The lower panel is the whole p53 protein identified by omnipotent anti-p53 antibody.

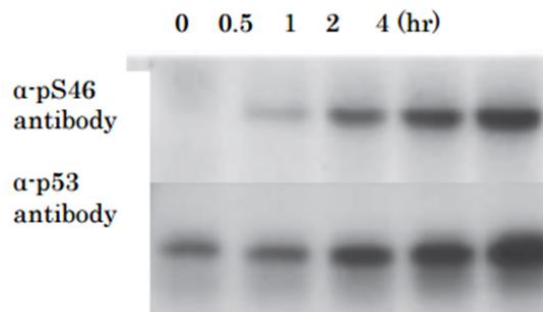


Fig. 2. Kinetics of phosphorylation of p53 at Ser46 after X-ray irradiation. Samples of U2OS cells (human osteosarcoma) were taken at the indicated times after X-ray irradiation at 10 Gy and analyzed by Western blot with anti-p53 p-S46 antibody (#71-115) and anti-p53 antibody. Primary antibodies were diluted with " Can Get Signal " signal enhancer (Toyobo, Osaka).

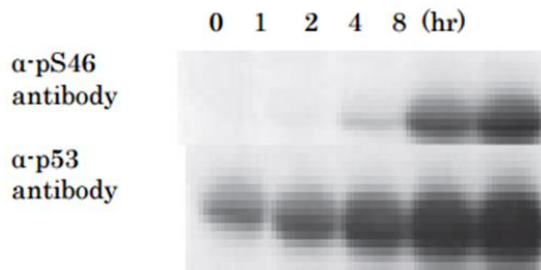


Fig.3. Kinetics of phosphorylation of p53 at Ser46 after UV-irradiation. Samples of MCF7 cells (human breast cancer cell line) were taken at the indicated times after UV irradiation at 20 J/m² and analyzed by Western blot with anti-p53 p-S46 antibody (#71-115) and anti-p53 antibody. Primary antibodies were diluted with " Can Get Signal " signal enhancer (Toyobo, Osaka).

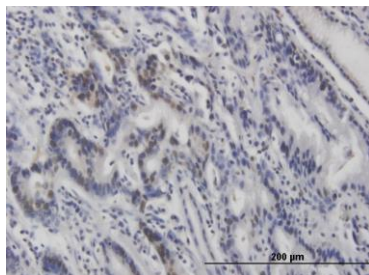


Fig. 4 Immunohistochemistry of stomach cancer. (Formalin/PFA-fixed paraffin-embedded section)