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Diagnostik & molekulare Diagnostik



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Mouse anti p21/WAF1/ cip1/Cyclin-dependent kinase inhibitor 1

Catalogue number: **MUB2057P**

Clone	WA1
Isotype	IgG1
Product Type	Primary Antibodies
Units	0.1mg
Host	Mouse
Species reactivity	Human Monkey
Application	ELISA Flow cytometry Immunoblotting Immunocytochemistry Immunohistochemistry (frozen) Immunohistochemistry (paraffin)

Background

p21/WAF1, also known as cip1 and cyclin-dependent kinase interacting protein 1, is a 21kDa protein that belongs to the CDI family of cyclin-dependent kinase inhibitors. In humans p21/WAF1 is encoded by the CDKN1A gene, the transcription of which is regulated by P53, for example in the case of DNA damage. The p21/WAF1 protein exists within the nucleus as a complex with cyclin, cyclin-dependent kinase (cdk) and proliferating cell nuclear antigen (PCNA). It functions as a potent inhibitor of cyclin-dependent kinases and plays a critical role in regulating cell growth and the cellular response to DNA damage. Studies show that the amino-terminal domain of p21/WAF1 binds to cyclin/cdk complexes and inhibits their activity, preventing cell cycle progression at the G1/S phase. In addition, p21/WAF1 can also bind through its carboxy-terminal domain to PCNA, inhibiting the activity of PCNA and, as a result, DNA replication. Expression of p21/WAF1 is tightly regulated at the transcriptional level by the tumour suppressor protein p53. It is reported to be upregulated in response to a variety of cellular stress stimuli. Loss of p21 expression has been associated with poor prognosis in several carcinomas including gastric carcinoma, non-small cell lung carcinoma, and thyroid carcinoma.

Source

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WA1 is a mouse IgG1 monoclonal antibody derived from the fusion of SP2 mouse myeloma cells with splenocytes from a BALB/c mouse immunized with human p21 protein.

Product

Each vial contains 100 µg 1mg/ml purified monoclonal antibody in PBS containing 0.09% sodium azide.

Applications

The WA1 antibody is suitable for the detection of p21/WAF1 by flow cytometry, immunocytochemistry, ELISA and western blotting. The antibody is also suitable for the detection of p21/WAF1 by immunohistochemistry of frozen and paraffin embedded tissues. Paraffin embedded tissues require pre-treatment prior to staining with the WA1 antibody. Antigen retrieval by heat treatment using sodium citrate buffer is suggested for this purpose. Optimal antibody dilutions for the different applications should be determined by titration.

Specificity

The antibody WA1 is directed against human p21/WAF1, but also recognizes this protein in non-human primates. Reports suggest that this antibody recognizes an epitope within the carboxy-terminal region of p21/WAF1.

Storage

Store at 4°C, or in small aliquots at -20°C.

References

1. Kolar Z, Murray PG, Scott K, Harrison A, Vojtesek B, Dusek J. (2000) Relation of Bcl-2 expression to androgen receptor, p21WAF1/CIP1, and cyclin D1 status in prostate cancer. Mol Pathol. 53:15-8.
2. Khanna SJ, Brown R, Whetton AD, Ball KL, Dive C. (2001) v-Abl protein-tyrosine kinase up-regulates p21WAF-1 in cell cycle arrested and proliferating myeloid cells. J Biol Chem. 276:11143-11150.
3. Kolar Z, Flavell JR, Ehrmann J Jr, Rihakova P, Macak J, Lowe D, Crocker J, Vojtesek B, Young LS, Murray PG. (2000) Apoptosis of malignant cells in Hodgkin's disease is related to expression of the cdk inhibitor p27KIP1. J Pathol. 190:604-12.

Caution

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