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ProductInformation

Monoclonal Anti- hPlk1 (Polo Like Kinase 1)
Clone 35-206
Purified Mouse Immunoglobulin

Product Code **P 5998**

Product Description

Monoclonal Anti- hPlk1 (Polo Like Kinase 1) (mouse IgG2b isotype) is derived from the 35-206 hybridoma produced by the fusion of mouse myeloma cells (PAI) and splenocytes from BALB/c mice immunized with human full length Plk1. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti- hPlk1 recognizes human, mouse and rat Plk1 (approx. 63 kDa). The product is useful in ELISA, immunoblotting, immunoprecipitation and immunocytochemistry (paraformaldehyde fixation).

Polo-like kinases (Plks) are a family of serine/threonine kinases that regulate cellular events in mitosis and cytokinesis. The Plk family is structurally and functionally related to the polo gene in *Drosophila.*[1,2] Four Plks were found to be expressed in mammals: Plk1, Plk2 or Snk, Plk3 or Prk/Fnk and Sak.[2,3] Plk1 activity is regulated by its phosphorylation and normally appears during mitosis. Plk1 localizes during mitosis in centrosomes, kinetochores and in the central spindle. Plk1 phosphorylates a number of substrate proteins such as Cdc25C and cyclin B1. In addition to its role in regulation of cell cycle, it was suggested that Plk1 has a role in tumor progression. Studies have shown that Plk1 is a target of the DNA damage checkpoint on the basis that its activity is inhibited by DNA damage in G_2 and mitosis. Moreover, Plk1 was found to bind to the sequence-specific DNA-binding domain of p53. This interaction between p53 and Plk1 inhibits the transcriptional activation and the pro-apoptotic functions of p53.[4-6]

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: approx. 2.0 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 0.04-0.08 µg/ml is determined by immunoblotting, using a whole extract of HeLa cell line (Human cervix epithloid carcinoma).

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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3. Van Vugt, M.A., et al., Polo-like kinase-1 is required for bipolar spindle formation but is dispensable for anaphase promoting complex/Cdc20 activation and initiation of cytokinesis., J. Biol. Chem., **279**, 36841-36854 (2004).

4. Neef, R., et al., Phosphorylation of mitotic kinesin-like protein 2 by polo-like kinase 1 is required for cytokinesis., J. Cell Biol., **162**, 863-875 (2003).
5. Smits, V.A., et al., Polo-like kinase-1 is a target of the DNA damage checkpoint., Nat. Cell Biol., **2**, 672-676 (2000).
6. Ando, K., et al., Polo-like kinase 1 (Plk1) inhibits p53 function by physical interaction and phosphorylation., J. Biol. Chem., **279**, 25549-25561 (2004).

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