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ProductInformation

MONOCLONAL ANTI-p19^{INK4d}
CLONE DCS-100
Mouse Ascites Fluid

Product Number **P4354**

Product Description

Monoclonal Anti-p19^{INK4d} (mouse IgG1 isotype) is derived from the DCS-100 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a recombinant human p19^{INK4d}. The isotype is determined using Sigma ImmunoType^{TM} Kit (Sigma ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti- p19^{INK4d} recognizes human p19^{INK4d} using immunoblotting, immunoprecipitation, immunocytochemistry and immunohistochemistry (formalin-fixed paraffin- embedded sections). The product does not show cross-reaction with the closely related CDK inhibitors, such as p15^{INK4b}, p16^{INK4a} and p18^{INK4c}.

During the cell cycle of most somatic cells, DNA synthesis (S-phase) and mitosis (M-phase) are separated by two gap phases (G_1 and G_2) of varying duration. Thus, a typical eukaryotic cell sequentially passes through G_1, S, G_2, and M and back into G_1 during a single cycle.[1] Regulation of cell cycle progression in eukaryotic cells depends on the expression of proteins called cyclins.[2] These proteins form complexes with several different cyclin dependent kinases (CDKs). Within the complexes, the cyclin subunit serves a regulatory role, whereas the CDKs have a catalytic protein kinase activity.[3] Complexes of cyclins and CDKs play a key role in cell cycle control; the eukaryotic cell cycle is regulated by the sequential activation of CDKs. The association of members of the cyclin family with the kinase subunit forms an active kinase, which can initiate M phase of mitosis and meiosis, or function as key regulators of each step of the cell cycle by phosphorylation of several cellular targets. The catalytic activity of CDKs is regulated by two general mechanisms: protein phosphorylation and association with regulatory subunits, which include the cyclins and the CDK inhibitors. Cyclin-kinase inhibitors (CKIs) are versatile negative regulators of cell proliferation that function in developmental decisions, checkpoint control and tumor suppression.[4,5] Specific polypeptide inhibitors of CDK4 and CDK6 (called INK4 proteins) can directly block cyclin D-dependent kinase activity and cause G_1 phase arrest.[6] The four known 15- to 19 kD INK4 proteins (p15^{INK4b}, p16^{INK4a}, p18^{INK4c} and p19^{INK4d}) bind and inhibit CDK4 and CDK6 but not other CDKs, including cyclin E-Cdk2, cyclin A-Cdk2 and cyclin B-Cdk1. Like the three D-type cyclins, the INK4 genes are expressed in distinct tissue-specific patterns, suggesting that they are not strictly redundant.[5] p19^{INK4d} is periodically expressed during cell cycle. It is maximally induced as cells enter S-phase. Endogenous p19^{INK4d} is often present at extremely low levels. The availability of a monoclonal antibody reacting specifically with p19^{INK4d} enables the subcellular detection and localization of p19^{INK4d} and the measurement of relative differences in p19^{INK4d} levels as a function of cell cycle phase.

Reagents

The product is supplied as ascites fluid with 15 mM sodium azide (see MSDS)* as a preservative.

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 minimum working dilution of 1:1,000 is determined by immunoblotting using a cultured human acute T cell leukemia cell line, Jurkat, extract.

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

References

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lpg 5/99