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Product Information

Monoclonal Anti-Cytochrome P450 3A5

Clone F18 P3 B6

produced in mouse, purified immunoglobulin

Catalog Number **C4743**

Product Description

Monoclonal Anti-Cytochrome P450 3A5 (mouse IgG1 isotype) is derived from the hybridoma F18 P3 B6 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 380-389 of human Cytochrome P450 3A5 (Gene ID: 1577). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Cytochrome P450 3A5 (CYP3A5) reacts specifically with human cytochrome P450 3A5. Applications include ELISA,¹ immunoblotting (~55 kDa),¹ and immunohistochemistry.¹ The antibody does not cross react with cytochrome P450 3A4 or 3A7.

Cytochrome P450 enzymes are a super family of heme containing mono-oxygenases that in humans are involved with oxidative metabolism of xenobiotics. This metabolism is the initial step in the biotransformation and elimination of a wide variety of drugs and environmental pollutants from the body.² This family is classified into subfamilies based on their nucleic acid homology and contains 57 members. These proteins show different cell distribution and pattern of expression.³ The P450s enzymes have an important role in cancer therapy. For example, in colon cancer, drug compounds like polycyclic aromatic hydrocarbons and heterocyclic amines require metabolic activation by P450s enzymes before exerting their genotoxic effect.⁴ As a consequence, several therapeutic strategies are developed to exploit the presence, over-expression and activity of P450s in tumors, including: P450 vaccines, P450-mediated prodrug activation and P450 inhibitors. The Cytochrome P450 3A (CYP 3A) family contains several isoforms with the CYP 3A4 isoform contributing most of the family activity and the CYP 3A5, 3A7 and 3A43 being the minor isoforms. Of the latter, CYP3A5 is the best studied. Only twenty percent of the human population expressed it in the liver. The reason for the absence of expression is a splice site mutation.

CYP3A5 is also expressed in extrahepatic tissues and its expression is regulated by glucocorticoid receptor, pregnane X receptor and androstane receptor- β .⁵ CYP3A5 genotype may affect cancer susceptibility. CYP3A4/3A5 haplotypes show differential susceptibility to prostate cancer.⁵

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at -20°C in working aliquots. Repeated freezing and thawing, or 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

Immunoblotting: a working concentration of 0.5-1 $\mu\text{g}/\text{mL}$ is recommended using human recombinant cytochrome P450 3A5.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Kumarakulasingham, M., et al., *Clin. Cancer Res.*, **11**, 3758-3765 (2005).

2. Anzenbacher, P., and Anzenbacherova, E., *Cell Mol. Life Sci.*, **58**, 737-47 (2001).
3. Ding, X., and Kaminsky, L.S., *Annu. Rev. Pharmacol. Toxicol.*, **43**, 149-173 (2003).
4. Windmill, K.F., et al. *Mutat. Res.*, **376**, 153-160 (1997).
5. Daly, A.K., *Clin. Pharmacokinet.*, **45**, 13-31 (2006).

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