



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Monoclonal Anti-Cytochrome P450 3A7 Clone F19P2H2

produced in mouse, purified immunoglobulin

Catalog Number **C4993**

Product Description

Monoclonal Anti-Cytochrome P450 3A7 (mouse IgG1 isotype) is derived from the hybridoma F19P2H2 produced by the fusion of mouse myeloma cells (Ag 8563) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 494-503 of human Cytochrome P450 3A7 (Gene ID: 1551), conjugated to ovalbumin.¹ The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Cytochrome P450 3A7 (CYP3A7) recognizes specifically human cytochrome P450 3A7. Applications include ELISA,¹ immunoblotting (~ 47 kDa),¹ and immunohistochemistry.¹

The super family of cytochrome P450 enzymes are 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 The cytochrome P450 family contains 57 members which are classified into subfamilies based on their nucleic acid homology. These proteins show different cell distribution and pattern of expression.³ The cytochrome P450 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 cytochrome P450 enzymes before exerting their genotoxic effect.⁴ As a consequence, several therapeutic strategies are developed to exploit the presence, over-expression and activity of cytochrome P450 enzymes in tumors, including cytochrome P450 vaccines, cytochrome P450-mediated pro-drug activation and cytochrome P450 inhibitors. The Cytochrome P450 3A (CYP 3A) family contains several isoforms. The CYP 3A4 isoform contributes most of the family's activity while the CYP 3A5, 3A7 and 3A43 are the minor isoforms. CYP 3A7 is found at high levels in

fetal liver where the number of expressed xenobiotic metabolizing enzymes is small. This enzyme is responsible for the metabolism of steroids in the adrenal and gonads, such as retinoic acid, and of xenobiotics that reach the fetus, such as therapeutic drugs for women and substances of abuse. Isoforms of CYP3A7 were found to be expressed in different tissues as well as in different developmental stages.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 antibody concentration of 1-2 µg/mL is recommended using human recombinant Cytochrome P450 3A7.

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

References

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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. Rodriguez-Antona, C., et al., *J. Biol. Chem.*, **280**, 28324-28331 (2005).

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