Product Information

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Monoclonal Anti-Cytochrome P450 1A2
Clone 3B8C1
produced in mouse, purified immunoglobulin

Catalog Number **C5118**

Product Description

Monoclonal Anti-Cytochrome P450 1A2 (mouse IgG1 isotype) is derived from the hybridoma 3B8C1 produced by the fusion of mouse myeloma cells (Ag 8563) and splenocytes from BALB/c mice immunized with rat Cytochrome P450 proteins The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Cytochrome P450 1A2 (CYP1A2) specifically recognizes human (Gene ID: 1544) and rat (Gene ID: 24297) cytochrome P450 1A2. Applications include immunoblotting (~ 55 kDa) and immunohistochemistry. The antibody does not cross react with Cytochrome P450 1A1 or 1B1.

Cytochrome P450 enzymes are a superfamily of heme containing mono oxygenases that are involved in oxidative metabolism of xenobiotics. This is the initial step in the biotransformation and elimination of a wide variety of drugs and environmental pollutants from the body.[1] The family contains 57 members that are classified into subfamilies based on their nucleic acid homology, and show different cell distributions and patterns of expression.[2]

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 P450 enzymes before exerting their genotoxic effect.[3] As a consequence, several therapeutic strategies are developed to exploit the presence, over expression, and activity of P450 enzymes in tumors including P450 vaccines, P450-mediated prodrug activation, and P450 inhibitors.

The cytochrome P450 sub families CYP1A, 1B and 2E are responsible for the bioactivation of the majority of xenobiotics, while the subfamilies CYP2C, 2B and 2D have no role in the bioactivation of toxic and carcinogenic chemicals. Furthermore, many chemical carcinogens bioactivated by CYP1 upon repeated administration selectively induce this family, thus exacerbating their carcinogenicity. The chemical compounds activated by the CYPA1 subfamily include polycyclic aromatic hydrocarbons (PAH), aromatic amines and amides, the planar polyhalogenated biphenyls and other halogenated polycyclics, azo compounds, mycotoxins and paracetamol.[4, 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 0.1-0.2 µg/mL is recommended using human recombinant cytochrome P450 1A2.

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

References

1. Anzenbacher, P., and Anzenbacherova, E., *Cell Mol. Life Sci.*, **58**, 737-47 (2001).
2. Ding, X., and Kaminsky, L.S., *Annu. Rev. Pharmacol. Toxicol.*, **43**, 149-173 (2003).

3. Windmill, K.F., et al., *Mutat. Res*., **376**, 153-160 (1997).
4. Sheweita, S.A., *Curr. Drug Metab*., **1**, 107-132 (2000).
5. Costas, I., et al., *Curr. Top. Med. Chem*., **4**, 1767-1788 (2004).

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