

Product Information

Monoclonal Anti-Cytochrome P450 2C6 (CYP2C6)

Clone K1

produced in mouse, purified immunoglobulin

Catalog Number **C0746**

Product Description

Monoclonal Anti-Cytochrome P450 2C6 (mouse IgG1 isotype) is derived from the hybridoma K1 (213xB12C6) produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with rat liver cytochrome P450 2C6 (Gene ID 246070). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Cytochrome P450 2C6 reacts with rat CYP 2C6 and human CYP 2C9, as well as other CYP 2C human proteins. It also reacts with phenobarbital-induced CYP 2C proteins in mice. It should be noted however that it does not react with human, rat, and mouse CYP 2C8. The antibody may be used in various immunochemical techniques including ELISA and immunoblotting (~ 49 kDa).

Cytochrome P450 enzymes are a heme containing mono oxygenase superfamily that in humans are involved in 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 distributions and patterns 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 The cytochrome P450 2C (CYP 2C) subfamily is composed of a group of constitutive microsomal hemoproteins, which are expressed primarily in liver. In humans, this subfamily is responsible for the metabolism of a variety of therapeutic drugs such as warfarin, mephenytoin, omeprazole, and anti-inflammatory drugs.⁵ Specifically, the rat CYP 2C6 is regarded as a counterpart of human CYP 2C9. Both isoforms specifically catalyze the

4-hydroxylation of diclofenac, phenytoin and warfarin. They can produce 21-hydroxyprogesterone, are inhibited by sulfaphenazole and are induced by phenobarbital. Therefore, the rat CYP 2C6 serves as a model for pharmacokinetics and dynamics studies.⁶⁻⁷

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: ~ 1.0 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 continuous use, store at 2-8 °C for up to one month. 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 0.25-0.5 µg/mL is recommended using rat liver total extract.

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. Anzenbacherova, E., *Cell Mol. Life Sci.*, **58**, 737-747 (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. Goldstein, J.A., *Br. J. Clin. Pharmacol.*, **52**, 349-355 (2001).
6. Daniel, W.A., et al., *Eur. Neuropsychopharmacol.*, **16**, 580-587 (2006).
7. Scollon, E.J., et al., *Drug Metab. Dispos.*, **37**, 221-228 (2009).

GG,KAA,PHC 02/09-1

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