SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2D6 (2K6): sc-130366

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The P450II family comprises at least five subfamilies, designated A through E by the system of nomenclature recommended by an international committee. The P450IID subfamily comprises at least two genes in the rat, one of which is highly specific for debrisoquine 4-hydroxylase activity. An association of this gene with lung cancer has been found. Enhanced CYP2D6 activity has been related to malignancies of the bladder, liver, pharynx and stomach, and especially to cigarette-smoking-induced lung cancer. The data suggests that enhanced CYP2D6-mediated metabolism of one or more dietary and other environmental agents, to form a reactive intermediate, plays a role in cancer initiation and/or promotion in various tissues. CYP2D6 polymorphism, which is responsible for the variation in metabolism of debrisoquine 4-hydroxylase, is important in the metabolism of more than 30 drugs and environmental chemicals, including as much as 20% of all commonly prescribed drugs. The gene which encodes CYP2D6 maps to human chromosome 22q13.2.

REFERENCES

1. Nebert, D.W., et al. 1987. The P450 gene superfamily: recommended nomenclature. DNA 6: 1-11.
2. Roots, I., et al. 1988. Debrisoquine hydroxylation phenotype, acetylation phenotype, and ABO blood groups as genetic host factors of lung cancer risk. Klin. Wochenschr. 66: 87-97.
3. Law, M.R., et al. 1989. Debrisoquine metabolism and genetic predisposition to lung cancer. Br. J. Cancer 59: 686-687.

CHROMOSOMAL LOCATION

Genetic locus: CYP2D6 (human) mapping to 22q13.2.

SOURCE

CYP2D6 (2K6) is a mouse monoclonal antibody raised against a partial recombinant protein mapping within amino acids 91-190 of CYP2D6 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CYP2D6 (2K6) is recommended for detection of CYP2D6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for CYP2D6 siRNA (h): sc-41489, CYP2D6 shRNA Plasmid (h): sc-41489-SH and CYP2D6 shRNA (h) Lentiviral Particles: sc-41489-V.

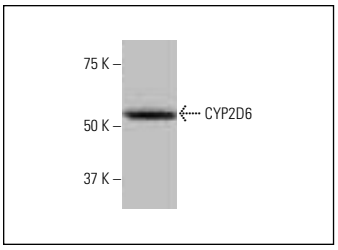
Molecular Weight of CYP2D6: 50 kDa.

Positive Controls: A549 cell lysate: sc-2413 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



CYP2D6 (2K6): sc-130366. Western blot analysis of CYP2D6 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Qian, Y., et al. 2011. Cell culture and gene transcription effects of copper sulfate on Chinese hamster ovary cells. Biotechnol. Prog. 27: 1190-1194.
2. Williams, I.S., et al. 2018. Biotransformation, using recombinant CYP450-expressing Baker's yeast cells, identifies a novel CYP2D6.10^{A122V} variant which is a superior metabolizer of codeine to morphine than the wild-type enzyme. ACS Omega 3: 8903-8912.
3. Wang, H., et al. 2020. Plasma proteomic analysis of autoimmune hepatitis in an improved AIH mouse model. J. Transl. Med. 18: 3.
4. Khayeka-Wandabwa, C., et al. 2021. Concomitant occurence of multiple autoantibodies against human cytochromes P450. Int. Immunopharmacol. 100: 108087.
5. Lee, Y.T., et al. 2022. Sex-divergent expression of cytochrome P450 and SIRTUIN 1-7 proteins in toxicity evaluation of a benzimidazole-derived epigenetic modulator in mice. Toxicol. Appl. Pharmacol. 445: 116039.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.