SANTA CRUZ BIOTECHNOLOGY, INC.

CYP1B1 (G-4): sc-374228

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cytochrome P450 1B1 (CYP1B1) is a key enzyme involved in the production of potentially carcinogenic estrogen metabolites and the activation of environmental carcinogens and is the predominant member of the CYP1 family expressed in normal breast tissue and breast cancer. Estrogen has been proposed to trigger breast cancer development via an initiating mechanism involving its metabolite, catechol estrogen (CE). CYP1B1 catalyzes the conversion of 17-β-estradiol to the catechol estrogen metabolites 2-OH-E2 and 4-OH-E2 which have both been postulated to be involved in mammary carcinogenesis. Genetic polymorphisms in CYP1B1 may play an important role in human prostate carcinogenesis as well. Polymorphism of the CYP1B1 gene at codon 432 (Val→Leu) is associated with a change in catalytic function.

CHROMOSOMAL LOCATION

Genetic locus: CYP1B1 (human) mapping to 2p22.2.

SOURCE

CYP1B1 (G-4) is a mouse monoclonal antibody raised against amino acids 221-325 mapping within an internal region of CYP1B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP1B1 (G-4) is available conjugated to agarose (sc-374228 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374228 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374228 PE), fluorescein (sc-374228 FITC), Alexa Fluor® 488 (sc-374228 AF488), Alexa Fluor® 546 (sc-374228 AF546), Alexa Fluor® 594 (sc-374228 AF594) or Alexa Fluor® 647 (sc-374228 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374228 AF680) or Alexa Fluor® 790 (sc-374228 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP1B1 (G-4) is recommended for detection of CYP1B1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CYP1B1 siRNA (h): sc-44546, CYP1B1 shRNA Plasmid (h): sc-44546-SH and CYP1B1 shRNA (h) Lentiviral Particles: sc-44546-V.

Molecular Weight of CYP1B1: 55 kDa.

Positive Controls: CYP1B1 (h): 293T Lysate: sc-158414.

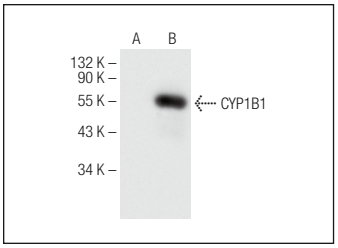
STORAGE

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.

DATA



CYP1B1 (G-4): sc-374228. Western blot analysis of CYP1B1 expression in non-transfected: sc-117752 (**A**) and human CYP1B1 transfected: sc-158414 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kurzawski, M., et al. 2012. Expression of genes involved in xenobiotic metabolism and transport in end-stage liver disease: up-regulation of ABCC4 and CYP1B1. Pharmacol. Rep. 64: 927-939.
2. Vrzal, R., et al. 2013. Khellin and visnagin differentially modulate AHR signaling and downstream CYP1A activity in human liver cells. PLoS ONE 8: e74917.
3. Novotna, A., et al. 2014. Enantiospecific effects of ketoconazole on aryl hydrocarbon receptor. PLoS ONE 9: e101832.
4. Riddell, N., et al. 2015. Characterization and biological potency of mono- to tetra-halogenated carbazoles. Environ. Sci. Technol. 49: 10658-10666.
5. Lo, S.N., et al. 2017. Berberine activates aryl hydrocarbon receptor but suppresses CYP1A1 induction through miR-21-3p stimulation in MCF7 breast cancer cells. Molecules 22: 1847.
6. Meng, Q., et al. 2018. Design, synthesis, and biological evaluation of cytochrome P450 1B1 targeted molecular imaging probes for colorectal tumor detection. J. Med. Chem. 61: 10901-10909.
7. Zajda, K., et al. 2019. Compounds of PAH mixtures dependent interaction between multiple signaling pathways in granulosa tumour cells. Toxicol. Lett. 310: 14-22.
8. Tarnow, P., et al. 2020. Characterization of quinoline yellow dyes as transient aryl hydrocarbon receptor agonists. Chem. Res. Toxicol. 33: 742-750.
9. Bauer, A.K., et al. 2022. The carcinogenic properties of overlooked yet prevalent polycyclic aromatic hydrocarbons in human lung epithelial cells. Toxics 10: 28.

PROTOCOLS

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