SANTA CRUZ BIOTECHNOLOGY, INC.

UGT1A (B-4): sc-271268

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glucuronidation, an important bile acid detoxification pathway, is catalyzed by enzymes belonging to the UDP-glucuronosyltransferase (UGT) superfamily. UGT genes are classified into the UGT1A and UGT2B subfamilies. Although each subfamily and each isoform shows tissue-specific patterns of distribution, the underlying mechanisms for this tissue specificity have not been fully elucidated. The human UDP-glucuronosyltransferase 1 (UGT1) locus encodes at least ten UGT1A proteins (UGT1A1-UGT1A10) that play a prominent role in drug and xenobiotic metabolism. Research indicates that nuclear receptors such as pregnane X receptor (PXR), constitutive androstane receptor (CAR) and peroxisome proliferator-activated receptor (PPAR) can regulate UGTs, which may contribute to the tissue-specific expression pattern of UGTs. Deficiency in the expression and/or activity of UGTs may lead to genetic and acquired diseases such as Crigler-Najjar syndrome and Gilbert syndrome. Based on their ability to catalyze the glucuronidation of xenobiotics and endobiotics, UGTs play a critical role in hormonal homeostasis, energy metabolism, bilirubin clearance and xenobiotic detoxification.

SOURCE

UGT1A (B-4) is a mouse monoclonal antibody raised against amino acids 234-533 mapping at the C-terminus of UGT1A1 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.

UGT1A (B-4) is available conjugated to agarose (sc-271268 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271268 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271268 PE), fluorescein (sc-271268 FITC), Alexa Fluor® 488 (sc-271268 AF488), Alexa Fluor® 546 (sc-271268 AF546), Alexa Fluor® 594 (sc-271268 AF594) or Alexa Fluor® 647 (sc-271268 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271268 AF680) or Alexa Fluor® 790 (sc-271268 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

UGT1A (B-4) is recommended for detection of UGT1A family members 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), immunohistochemistry (including paraffin-embedded sections) (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 UGT1A siRNA (h): sc-44538, UGT1A shRNA Plasmid (h): sc-44538-SH, UGT1A shRNA (h) Lentiviral Particles: sc-44538-V.

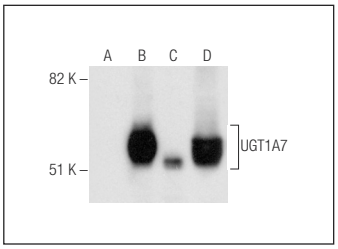
Molecular Weight of UGT1A: 64 kDa.

Positive Controls: UGT1A7 (h2): 293T Lysate: sc-174497, Caco-2 cell lysate: sc-2262 or human liver extract: sc-363766.

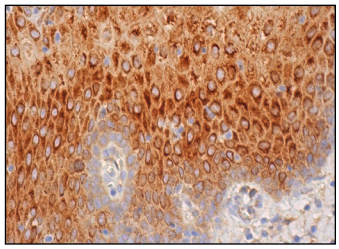
STORAGE

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

DATA



UGT1A (B-4): sc-271268. Western blot analysis of UGT1A7 expression in non-transfected 293T: sc-117752 (**A**), human UGT1A7 transfected 293T: sc-174497 (**B**) and Caco-2 (**C**) whole cell lysates and human liver tissue extract (**D**).



UGT1A (B-4): sc-271268. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Miyawaki, I., et al. 2012. The effects of clobazam treatment in rats on the expression of genes and proteins encoding glucronosyltransferase 1A/2B (UGT1A/2B) and multidrug resistance-associated protein-2 (MRP2), and development of thyroid follicular cell hypertrophy. Toxicol. Appl. Pharmacol. 265: 351-359.
2. Sumida, K., et al. 2013. Importance of UDP-glucuronosyltransferase 1A1 expression in skin and its induction by UVB in neonatal hyperbilirubinemia. Mol. Pharmacol. 84: 679-686.
3. Landmann, H., et al. 2014. UDP glucuronosyltransferase 1A expression levels determine the response of colorectal cancer cells to the heat shock protein 90 inhibitor ganetespib. Cell Death Dis. 5: e1411.
4. Lu, L., et al. 2015. Drug-metabolizing activity, protein and gene expression of UDP-glucuronosyltransferases are significantly altered in hepatocellular carcinoma patients. PLoS ONE 10: e0127524.
5. Van Peer, E., et al. 2017. *In vitro* phase I- and phase II-drug metabolism in the liver of juvenile and adult Göttingen minipigs. Pharm. Res. 34: 750-764.
6. Ng, P.K., et al. 2018. Systematic functional annotation of somatic mutations in cancer. Cancer Cell 33: 450-462.
7. Hao, Q., et al. 2020. Sulforaphane suppresses carcinogenesis of colorectal cancer through the ERK/Nrf2-UDP glucuronosyltransferase 1A metabolic axis activation. Oncol. Rep. 43: 1067-1080.
8. Cussotto, S., et al. 2021. The gut microbiome influences the bioavailability of olanzapine in rats. EBioMedicine 66: 103307.
9. Landerer, S., et al. 2021. UDP-glucuronosyltransferases mediate coffee-associated reduction of liver fibrosis in bile duct ligated humanized transgenic UGT1A mice. Hepatobiliary Surg. Nutr. 10: 766-781.

RESEARCH USE

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