

UGT1A (B-4): sc-271268

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 IgG₁ 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.

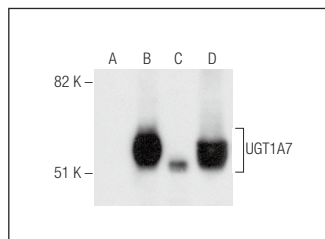
Molecular Weight of UGT1A: 64 kDa.

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

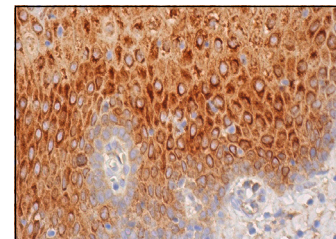
STORAGE

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

- Miyawaki, I., et al. 2012. The effects of clobazam treatment in rats on the expression of genes and proteins encoding glucuronosyltransferase 1A/2B (UGT1A/2B) and multidrug resistance-associated protein-2 (MRP2), and development of thyroid follicular cell hypertrophy. *Toxicol. Appl. Pharmacol.* 265: 351-359.
- 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.
- 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.
- 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.
- 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.
- Ng, P.K., et al. 2018. Systematic functional annotation of somatic mutations in cancer. *Cancer Cell* 33: 450-462.
- 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.
- Cussotto, S., et al. 2021. The gut microbiome influences the bioavailability of olanzapine in rats. *EBioMedicine* 66: 103307.
- 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.