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Anti-UGT1A1 Picoband Antibody

Catalog # ABO12964

Product Information

Application	WB, IHC-P, E
Primary Accession	P22309
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for UGT1A1 detection. Tested with WB, IHC-P, Direct ELISA in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	54658
Other Names	UDP-glucuronosyltransferase 1-1, UDPGT 1-1, UGT1*1, UGT1-01, UGT1.1, 2.4.1.17, Bilirubin-specific UDPGT isozyme 1, hUG-BR1, UDP-glucuronosyltransferase 1-A, UGT-1A, UGT1A, UDP-glucuronosyltransferase 1A1, UGT1A1, GNT1, UGT1
Calculated MW	59591
Application Details	Western blot, 0.1-0.5 □g/ml Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml Direct ELISA, 0.1-0.5 □g/ml
Subcellular Localization	Isoform 1: Microsome.
Tissue Specificity	Isoform 1 and isoform 2 are expressed in liver, colon and small intestine. Isoform 2 but not isoform 1 is expressed in kidney. Isoform 1 and isoform 2 are not expressed in esophagus. Not expressed in skin.
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na_2HPO_4, 0.05mg NaN_3.
Immunogen	E. coli-derived human UGT1A1 recombinant protein (Position: E316-H533).
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C; for one year. After r˚Constitution, at 4˚C; for one month. It˚Can

also be aliquotted and stored frozen at -20˚C; for a longer time. Avoid repeated freezing and thawing.

Protein Information

Name	UGT1A1 (HGNC:12530)
Synonyms	GNT1, UGT1
Function	[Isoform 1]: UDP-glucuronosyltransferase (UGT) that catalyzes phase II biotransformation reactions in which lipophilic substrates are conjugated with glucuronic acid to increase the metabolite's water solubility, thereby facilitating excretion into either the urine or bile (PubMed:12181437, PubMed:15472229, PubMed:18004206, PubMed:18004212, PubMed:18719240, PubMed:19830808, PubMed:23288867, PubMed:15231852, PubMed:21422672, PubMed:38211441). Essential for the elimination and detoxification of drugs, xenobiotics and endogenous compounds (PubMed:12181437, PubMed:18004206, PubMed:18004212). Catalyzes the glucuronidation of endogenous estrogen hormones such as estradiol, estrone and estriol (PubMed:15472229, PubMed:18719240, PubMed:23288867). Involved in the glucuronidation of bilirubin, a degradation product occurring in the normal catabolic pathway that breaks down heme in vertebrates (PubMed:17187418, PubMed:18004206, PubMed:19830808, PubMed:24525562). Involved in the glucuronidation of arachidonic acid (AA) and AA-derived eicosanoids including 15-HETE, 20-HETE, PGB1 and F2-isoprostane (8-iso-PGF2alpha) (PubMed:15231852, PubMed:38211441). Involved in the glucuronidation of the phytochemical ferulic acid at the phenolic or the carboxylic acid group (PubMed:21422672). Also catalyzes the glucuronidation the isoflavones genistein, daidzein, glycitein, formononetin, biochanin A and prunetin, which are phytoestrogens with anticancer and cardiovascular properties (PubMed:18052087, PubMed:19545173). Involved in the glucuronidation of the AGTR1 angiotensin receptor antagonist losartan, a drug which can inhibit the effect of angiotensin II (PubMed:18674515). Involved in the biotransformation of 7-ethyl-10-hydroxycamptothecin (SN-38), the pharmacologically active metabolite of the anticancer drug irinotecan (PubMed:12181437, PubMed:18004212, PubMed:20610558).
Cellular Location	Endoplasmic reticulum membrane; Single-pass membrane protein. Cytoplasm, perinuclear region
Tissue Location	[Isoform 1]: Expressed in liver, colon and small intestine. Not expressed in kidney, esophagus and skin

Background

UDP-glucuronosyltransferase 1-1 also known as UGT-1A is an enzyme that in humans is encoded by the UGT1A1 gene. This gene encodes a UDP-glucuronosyltransferase, an enzyme of the glucuronidation pathway that transforms small lipophilic molecules, such as steroids, bilirubin, hormones, and drugs, into water-soluble, excretable metabolites. This gene is part of a complex locus that encodes several UDP-glucuronosyltransferases. The locus includes thirteen unique alternate first exons followed by four common exons. Four of the alternate first exons are considered pseudogenes. Each of the remaining nine 5' exons may be spliced to the four common exons, resulting in nine proteins with different N-termini and identical C-termini. Each first exon encodes the substrate binding site, and is regulated by its own promoter. The preferred substrate of this enzyme is bilirubin, although it also has moderate activity with simple phenols, flavones, and C18 steroids. Mutations in this gene result in Crigler-Najjar syndromes types I and II and in Gilbert syndrome.

Images

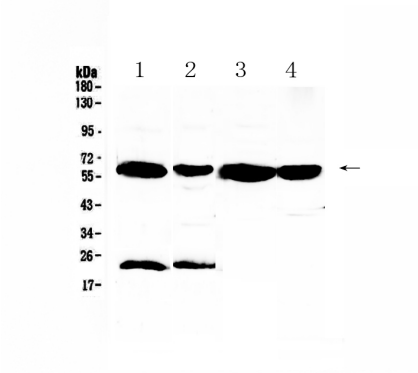


Figure 1. Western blot analysis of UGT1A1 using anti-UGT1A1 antibody (ABO12964). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: rat liver tissue lysates,Lane 2: rat kidney tissue lysates,Lane 3: mouse liver tissue lysates,Lane 4: mouse kidney tissue lysates.After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-UGT1A1 antigen affinity purified polyclonal antibody (Catalog # ABO12964) at 0.5 □¼g/mL overnight at 4 □°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for UGT1A1 at approximately 59KD. The expected band size for UGT1A1 is at 59KD.

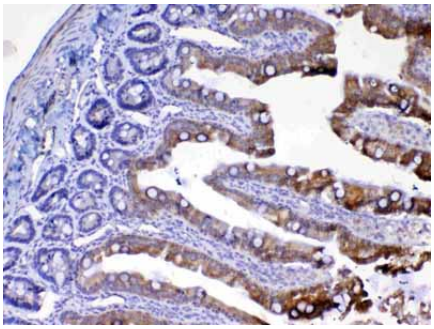


Figure 2. IHC analysis of UGT1A1 using anti-UGT1A1 antibody (ABO12964).UGT1A1 was detected in paraffin-embedded section of rat small intestine tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-UGT1A1 Antibody (ABO12964) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

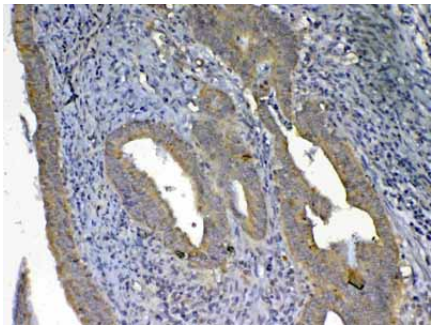
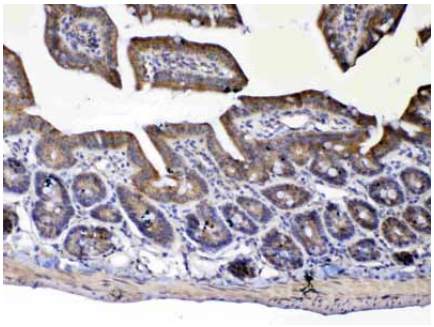


Figure 3. IHC analysis of UGT1A1 using anti-UGT1A1 antibody (ABO12964).UGT1A1 was detected in paraffin-embedded section of human rectal cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-UGT1A1 Antibody (ABO12964) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

Figure 4. IHC analysis of UGT1A1 using anti-UGT1A1 antibody (ABO12964).UGT1A1 was detected in paraffin-embedded section of mouse small intestine tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20



mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-UGT1A1 Antibody (ABO12964) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

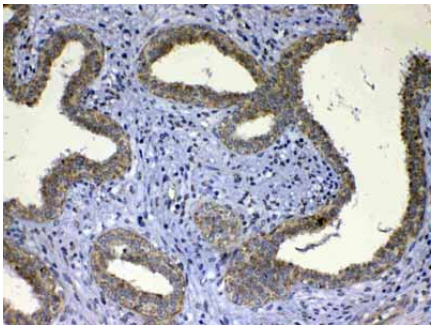


Figure 5. IHC analysis of UGT1A1 using anti-UGT1A1 antibody (ABO12964).UGT1A1 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-UGT1A1 Antibody (ABO12964) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

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