10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

DHCR7 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11452b

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	Q9UBM7
Other Accession	NP_001157289.1, NP_001351.2
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17942
Calculated MW	54489
Antigen Region	437-463

Additional Information

Gene ID	1717
Other Names	7-dehydrocholesterol reductase, 7-DHC reductase, Putative sterol reductase SR-2, Sterol Delta(7)-reductase, DHCR7, D7SR
Target/Specificity	This DHCR7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 437-463 amino acids from the C-terminal region of human DHCR7.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DHCR7 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DHCR7 (HGNC:2860)
Synonyms	D7SR

Function	Oxidoreductase that catalyzes the last step of the cholesterol synthesis pathway, which transforms cholesta-5,7-dien- 3beta-ol (7-dehydrocholesterol,7-DHC) into cholesterol by reducing the C7-C8 double bond of its sterol core (PubMed:25637936, PubMed:38297129, PubMed:38297130, PubMed:9465114, PubMed:9634533). Can also metabolize cholesta-5,7,24-trien-3beta-ol (7-dehydrodemosterol, 7-DHD) to desmosterol, which is then metabolized by the Delta(24)-sterol reductase (DHCR24) to cholesterol (By similarity). Modulates ferroptosis (a form of regulated cell death driven by iron-dependent lipid peroxidation) through the metabolic breakdown of the anti- ferroptotic metabolites 7-DHC and 7-DHD which, when accumulated, divert the propagation of peroxyl radical-mediated damage from phospholipid components to its sterol core, protecting plasma and mitochondrial membranes from phospholipid autoxidation (PubMed:38297129, PubMed:38297130).
Cellular Location	Endoplasmic reticulum membrane; Multi-pass membrane protein
Tissue Location	Widely expressed. Most abundant in adrenal gland, liver, testis, and brain.

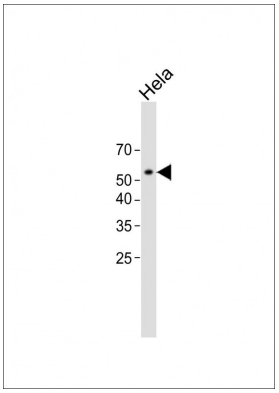
Background

This gene encodes an enzyme that removes the C(7-8) double bond in the B ring of sterols and catalyzes the conversion of 7-dehydrocholesterol to cholesterol. This gene is ubiquitously expressed and its transmembrane protein localizes to the endoplasmic reticulum membrane and nuclear outer membrane. Mutations in this gene cause Smith-Lemli-Opitz syndrome (SLOS); a syndrome that is metabolically characterized by reduced serum cholesterol levels and elevated serum 7-dehydrocholesterol levels and phenotypically characterized by mental retardation, facial dysmorphism, syndactyly of second and third toes, and holoprosencephaly in severe cases to minimal physical abnormalities and near-normal intelligence in mild cases. Alternative splicing results in multiple transcript variants that encode the same protein.

References

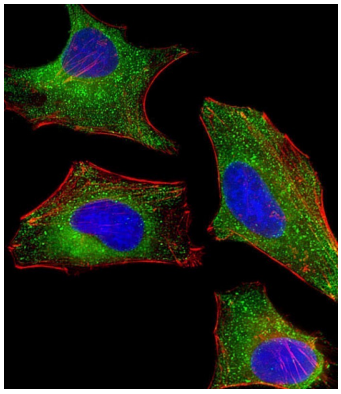
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Koo, G., et al. Am. J. Med. Genet. A 152A (8), 2094-2098 (2010) :
Wang, T.J., et al. Lancet 376(9736):180-188(2010)
Ahn, J., et al. Hum. Mol. Genet. 19(13):2739-2745(2010)
Jugessur, A., et al. PLoS ONE 5 (7), E11493 (2010) :

Images

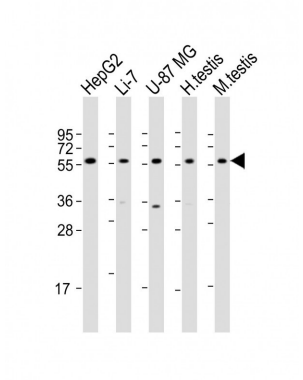


All lanes: Anti-DHCR7 Antibody (C-term) at 1:2000 dilution + Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 54 KDa Blocking/Dilution buffer: 5% NFDM/TBST.

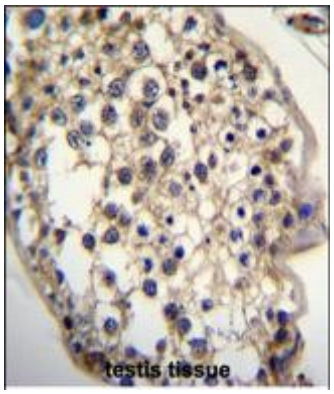
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical epithelial adenocarcinoma cell line)



cells labeling DHCR7 with AP11452B at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-rabbit IgG (NK179883) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing cytoplasm staining on HeLa cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (PD18466410) at 1/100 dilution (red).The nuclear counter stain is DAPI (blue).



All lanes : Anti-DHCR7 Antibody (C-term) at 1:2000 dilution Lane 1: HepG2 whole cell lysate Lane 2: Li-7 whole cell lysate Lane 3: U-87 MG whole cell lysate Lane 4: human testis lysate Lane 5: mouse testis lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 54 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



DHCR7 Antibody (C-term) (Cat. #AP11452b)immunohistochemistry analysis in formalin fixed and paraffin embedded human testis tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of DHCR7 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- Astrocytic ApoE reprograms neuronal cholesterol metabolism and histone-acetylation-mediated memory

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.