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SLC38A4 Antibody

Catalog # ASC11953

Product Information

Application	WB, IHC, E
Primary Accession	Q969I6
Other Accession	NP_060488, 18482385
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	60764
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SLC38A4 antibody can be used for the detection of SLC38A4 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL.

Additional Information

Gene ID	55089
Other Names	Sodium-coupled neutral amino acid transporter 4, Amino acid transporter A3, Na(+)-coupled neutral amino acid transporter 4, Solute carrier family 38 member 4, System A amino acid transporter 3, System N amino acid transporter 3, SLC38A4, ATA3, NAT3, SNAT4
Target/Specificity	SLC38A4; SLC38A4 antibody is human and mouse reactive. SLC38A4 will not cross-react with other members of the SLC38 protein family.
Reconstitution & Storage	SLC38A4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	SLC38A4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SLC38A4 (HGNC:14679)
Function	Symporter that cotransports neutral amino acids and sodium ions from the extracellular to the intracellular side of the cell membrane (PubMed:11342143, PubMed:19015196, PubMed:33928121). The transport is electrogenic, pH dependent and partially tolerates substitution of Na(+) by Li(+) (PubMed:11414754). Preferentially transports smaller amino acids, such as glycine, L-alanine, L-serine, L-asparagine and L-threonine, followed by L-cysteine, L-histidine, L- proline and L-glutamine and L-methionine (PubMed:11414754, PubMed:33928121).

Cellular Location	Cell membrane; Multi-pass membrane protein. Cell projection, microvillus membrane; Multi-pass membrane protein Note=Microvillus membrane localization in placenta
Tissue Location	Expressed almost exclusively in embryonic and adult liver, and at lower levels in the kidney (PubMed:11342143, PubMed:11414754). Expressed at lower levels in adult muscle and pancreas (PubMed:11414754). Detected in fetal blood vessels (PubMed:16148032). Expressed in syncytiotrophoblas of placenta during first trimester and at term (PubMed:16148032, PubMed:19015196). Highly expressed in first trimester placenta compared to term placenta (PubMed:19015196).

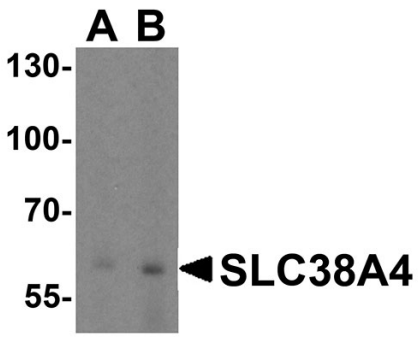
Background

SLC38A4 is found predominantly in liver and transports both cationic and neutral amino acids (1,2). The transport of cationic amino acids by SLC38A4 is sodium and pH independent, while the transport of neutral amino acids is sodium and pH dependent (2). Recent evidence suggests that SLC38A4 functions as a regulator of protein synthesis downstream of the hepatocyte nuclear factor 4a during liver development (3). It has also been suggested that SLC38A4 has ATPase activity and is critically involved in the maintenance of mitochondrial homeostasis and cell survival (4).

References

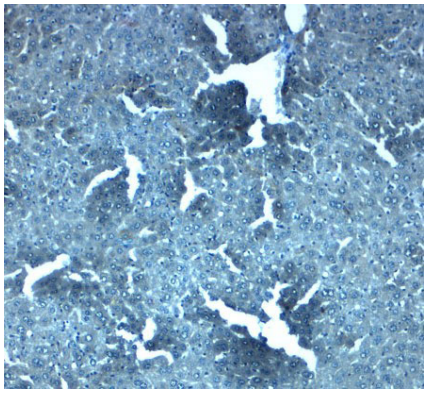
Sugawara M, Nakanishi T, Fei YJ, et al. Structure and function of ATA3, a new subtype of amino acid transport system A, primarily expressed in the liver and skeletal system. Biochim. Biophys. Acta 2000; 1509:7-13.
Hatanaka T, Huang W, Ling R, et al. Evidence for the transport of neutral as well as cationic amino acids by ATA3, a novel and liver-specific subtype of amino acid transport system A. Biochim. Biophys. Acta 2001 1510:10-7.
Kondou H, Kawai M, Tachikawa K, et al. Sodium-coupled neutral amino acid transporter 4 functions as a regulator of protein synthesis during liver development. Hepatol. Res. 2013; 43:1211-23.
Yang X, Yang J, Li L, et al. PAAT, a novel ATPase and trans-regulator of mitochondrial ABC transporters, is critically involved in the maintenance of mitochondrial homeostasis. FASEB J. 2014; 28:4821-34.

Images



Western blot analysis of SLC38A4 in mouse kidney tissue lysate with SLC38A4 antibody at (A) 1 and (B) 2 µg/ml.

Immunohistochemistry of SLC38A4 in mouse liver tissue with SLC38A4 antibody at 2.5 µg/mL.



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