COSMO BIO CO., LTD.
Inspiration for Life Science

Medicine transporter is a generic term of a membrane protein that play a role on an excretive function and taking a medicine in vivo. These are sorted variously by a diversity of substrate recognition. Of which, transportation matrix of an Organic anion transporter family (OAT) contains a wide variety of endogenous and exogenous organic substance and their metabolite such as estrone sufate, penicillin G, nonsteroidal anti-inflammatory drug, ochratoxin A ,thus, It is considered to be very important for understanding the pharmacokinetics of the drug .

Amino Acid transporter, especially L type Amino Acid transporter family (LAT family) indicates relatively wide substrate choice, form the cofactor 4F2hc(4F2 Heavy Chain :CD98) and rBAT(Related to b0,+-type Amino Acid Tranporter) as terodimer to bring into action.

General Name	HGNC Name
ABC Transporter	
P-glycoprotein family ABCB	ABCB
MRP family	ABCC
Organic Ion Transporter	
OAT family	
OCT family	
Hepar specific Organic Anion Transporter	SLC21
oatp/LST family	
Peptide Transporter	SLC15
PEPT family	
Amino acid Transporter	SLC7
LAT family	

HGNC : Human Gene Nomenclature Committee

Drug and Amino acid Transporter related antibody

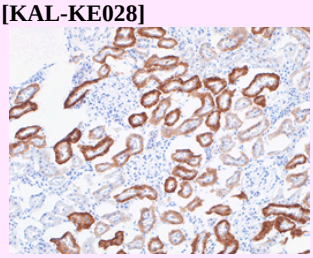
Anti 4F2 Heavy Chain (4F2hc:CD98) polyclonal antibodies

4F2 heavy chain（4F2hc:CD98）is originally identified as a cell-surface antigen which is upregulated by lymphocyte activation, and is a single memblane-spanning protein, of which molecular weight is under 85-kDa. The transporter corresponds to the amino acid transporter, system L, y+L, X-c, and asc, which requires 4F2hc for its functional expression. 4F2hc and its associated transporters are linked via disulfide band to form heterodimeric complexes. 4F2hc is present at cell membrane in blood vessel side of epitherliocyte, and transports its associated transporters to cell membrane of blood vessel in epitherliocyte.

Considering the peptide amino acid sequence, KAL-KE028 also seems to react with mouse 4F2hc.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE020	Rabbit	9D8	Human	250ug	IH, WB
KAL-KE028	Rabbit	9D8	Rat, Mouse	25ug	IH, WB

[KAL-KE028]



Rat Kidney (frozen section)

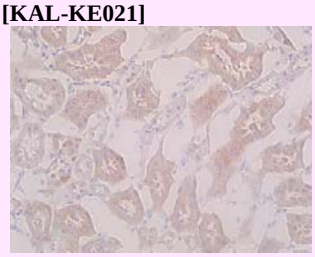
Anti Mouse Cystine / Glutamic Acid (xCT) Polyclonal Antibody

The amino acid transporter, cystine/glutamic acid transporter (xCT) for system x-c has been proposed to be responsible for the cystine transport through the plasma membrane. System x-c mediates an amino acid exchange and prefers cystine and glutamate as its substrates. The transporter designated as xCT requires 4F2 heavy chain (4F2hc:CD98) for its functional expression, and belongs to the family of amino acid transporters which associates with the type II membrane glycoproteins such as 4F2hc. In brain, it has been proposed that system x-c is up-regulated in glial cells upon the oxidative stress and plays an essential roles to protect neurons against oxidative stress.

Considering the peptide amino acid sequence, this antibody also seems to react with human xCT.

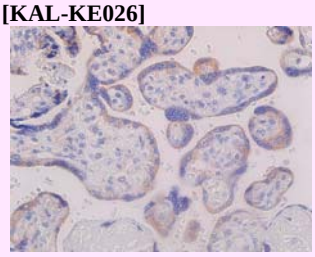
Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE021	Rabbit	SLC7A11	Human, Mouse	25ug	IH, WB

[KAL-KE021]



Mouse Kidney (frozen section)

[KAL-KE026]



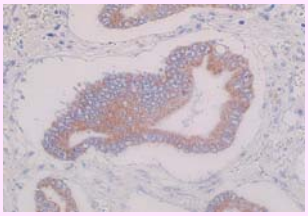
Mouse Kidney (frozen section)

Anti Human L-type Amino Acid Transporter 1 (LAT1) Antibodies

L-type amino acid transporter 1 (LAT1) is a predicted 12 membrane-spanning protein and is unique because it requires an additional single membrane spanning protein, 4F2 heavy chain (4F2hc:CD98), for its functional expression. L-type is Na+ - independent neutral amino acid transporter agency and essential for the transporter of large neutral amino acid such as Leucine, Isoleucine, Varine through the plasma membrane. LAT1 is, thus transporter responsible for the permeation of aromatic or branched-chain amino acids and amino acid-related drugs such as L-DOPA. LAT has been proposed to be one of the major nutrient transport systems at the blood-brain barrier. Highly regulated nature and high level of expression in tumor cell lines, LAT is thought to be up-regulated to support the high protein synthesis for cell glowth and cell activation.

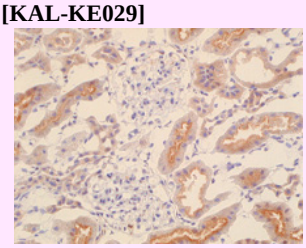
Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE023	Mouse	SLC7A5	Human	20ug	IH, WB
KAL-KE026	Rabbit	SLC7A5	Human, Rat, Mouse	25ug	IH, WB

* KAL-KE023: clone 4D9



Human stomach papillary adenocarcinoma

[KAL-KE029]



Rat Kidney (frozen section)
Luminal side of renal tubule are positively stained.

Anti Mouse asc-type Amino Acid Transporter 1 (Asc-1) Polyclonal Antibody

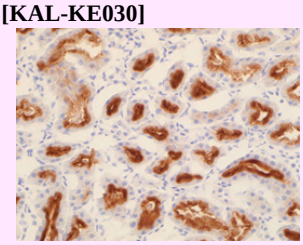
Asc-type amino acid transporter 1(Asc-1) is a member of the family of amino acid transporters associated with type II membrane glycoproteins , which requires an additional single membrane spanning protein, 4F2 heavy chain (4F2hc: CD98), for its functional expression. Asc-1 mediates the transport of neutral amino acid, in particular, small neutral amino acids such as Gly, L-ala, L-Ser, L-Thr and L-Cys as substrate in Na+-independent manner.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE027	Rabbit	SLC7A10	Mouse	25ug	IH, WB

Anti Rat $b^{0,+}$ -type Amino Acid Transporter (BAT1) Polyclonal Antibody

Related to $b^{0,+}$ amino acid transporter (rBAT) is identified amino acid transporter that is associated with the cystinuria-related type II membrane glycoprotein. It induces Na^+-independent transport of cystine as well as basic and neutral amino acids with the properties of $b^{0,+}$ amino acid transporter 1 (BAT1) . rBAT1 was found to be related to the genetic disease cystinuria, in which defects in amino acid reabsorption in the renal proximal tubules lead to urinary loss of cystine and basic amino acids. The BAT1 and rBAT proteins were shown to be colocalized in the apical membrane of the renal proximal tubules where massive cystine transport had been proposed, and BAT1 is associated with rBAT to express its function.

[KAL-KE030]



Rat Kidney (frozen section)
Luminal side of renal tubule are positively stained.

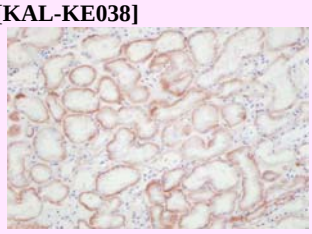
Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE029	Rabbit		Human, Rat, Mouse	200ug	IH, WB

Anti Rat Related to $b^{0,+}$ Amino Acid Transporter (rBAT) Polyclonal Antibody

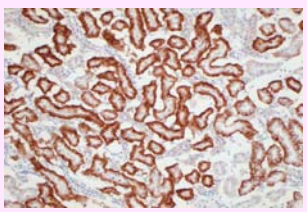
Related to $b^{0,+}$ amino acid transporter (rBAT) is identified amino acid transporter that is associated with the cystinuria-related type II membrane glycoprotein. It induces Na^+-independent transport of cystine as well as basic and neutral amino acids with the properties of $b^{0,+}$ amino acid transporter 1 (BAT1) . rBAT1 was found to be related to the genetic disease cystinuria, in which defects in amino acid reabsorption in the renal proximal tubules lead to urinary loss of cystine and basic amino acids. The BAT1 and rBAT proteins were shown to be colocalized in the apical membrane of the renal proximal tubules where massive cystine transport had been proposed, and BAT1 is associated with rBAT to express its function.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE030	Rabbit	SLC3A1	Rat	25ug	IH, WB

[KAL-KE038]



Human Kidney (frozen section)



Rat Kidney (frozen section)

Anti Human Organic Anion Transporter 1 (OAT1) Polyclonal Antibody

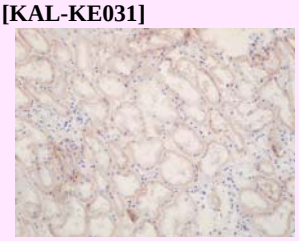
Human Organic anion transporter 1(OAT1) encodes a 563 amino acid residue protein, and which is predicted 12 putative membrane-spanning protein. Human OAT1 was found to be expressed predominantly in the kidney and only weakly in the brain. OAT1 mediates the Na+-independent transport of organic anions, such as PAH (ρ -aminohippurate), cyclic nucleotides, prostanoides, dicaroxylates, and many anion drugs.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE038	Rabbit	SLC22A6	Human	25ug	IH

Anti Human Organic Anion Transporter 2 (OAT2) Polyclonal Antibody

Organic anion transporter 2 (OAT2) is predicted 12 putative membrane-spanning protein, and which is expressed predominantly in the liver and only weakly in the kidney. OAT2 mediates the Na+-independent transport of organic anions, such as salicylate, and also mediates the transport of prostaglandin E2 (PGE2), methotrexate, acetylsalicylate and PAH (ρ -aminohippurate).

[KAL-KE031]



Human Kidney (frozen section)

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE031	Rabbit	SLC722A7	Human	25ug	IH

Anti Organic Anion Transporter 3 (OAT3) Polyclonal Antibodies

Human organic anion transporter 3 (OAT3) encodes a 543 amino acid residue protein, and which is predicted 12 putative membran-spanning protein. OAT3 is expressed in the kidney, brain, and skeletal muscle. OAT3 mediated the uptake of organic anions, such as PAH (ρ -aminohippurate), ochratoxin A and estrone sulfate, prostaglandin E2 (PGE2), and cimetidine.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE032	Rabbit	SLC22A8	Human	25ug	IH

Rat organic anion transporter 3 (OAT3) encodes a 536 amino acid residue protein, of which molecular weight is 130kDa. OAT3 is expressed in the kidney, liver, brain, and eye. OAT3 mediated the uptake of organic anions, such as PAH (ρ -aminohippurate), ochratoxin A and estrone sulfate, cimetidine, and prostaglandin E2.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE035	Rabbit	SLC22A8	Rat	25ug	WB,IH

Anti Human Organic Anion Transporter 4 (OAT4) Polyclonal Antibody

Human organic anion transporter 4 (OAT4) encodes a 550 amino acid residue protein, and is predicted 12 putative membrane-spanning protein. OAT4 mediates the high-affinity Na+-independent transport of esteron sulfate, dehydroepiandrosterone (DHEA) sulfate, and ochratoxin A, ρ -aminohippurate (PAH). OAT4 is expressed in the kidney and placenta. OAT4 might be responsible for the elimination and detoxification of harmful anionic sybstances from the fetus.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE033	Rabbit	-	Human	20ug	IH

Anti Human Urate Transporter 1 (URAT1) Polyclonal Antibody

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KE094	Rabbit	SLC22A12	Human	25ug	WB,IHC

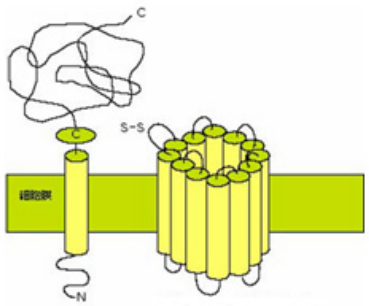
Anti Mouse Cation-Chloride-Cotransporter 9 Polyclonal Antibody

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KR066	Rabbit	-	Mouse	25ug	IHC

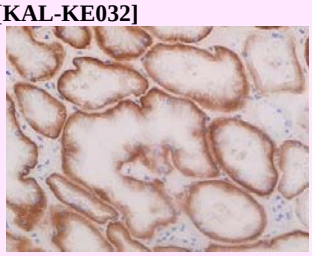
Anti Rat Organic Cation Transporter 3 Polyclonal Antibody

Organic Cation Transporter 3（OCT3）is expressed in kidney, placenta and brain. In brain, OCT3 is suggested that it is involved in monoamine regulation mechanism and plays a significant role in the disposition of cationic neurotoxins.
This antibody was established from the purified serum immunized with partial peptide of rat OCT3.

Code	Host	HGNC	Cross reactivity	Size	Application
KAL-KR071	Rabbit	-	Mouse	25ug	IHC

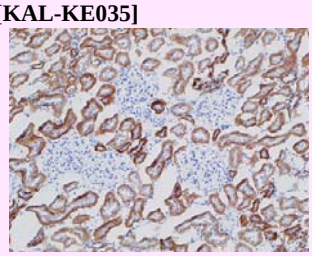


[KAL-KE032]



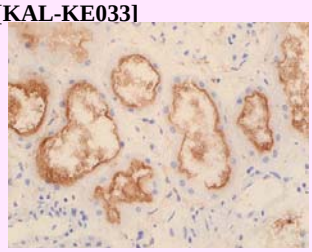
Human Kidney (frozen section)

[KAL-KE035]



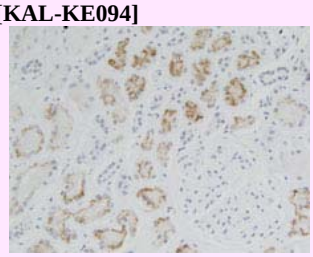
Rat Kidney (frozen section)
Basal lamina side of renal tubule are positively stained.

[KAL-KE033]



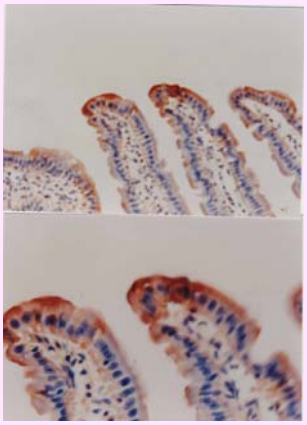
Human Kidney (frozen section)

[KAL-KE094]



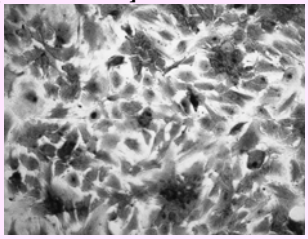
Human proximal tubule (IHC)

[KAL-KR066]



Rat small intestine (IHC)

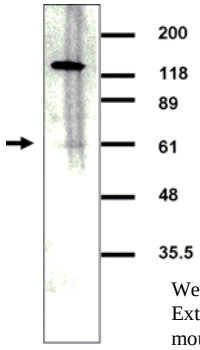
[KAL-KE094]



Rat brain astrocyte (IHC)

Obesity and Metabolic Syndrome Related Antibody

Anti Human PPAR γ Polyclonal Antibody



Western blotting
Extracted proteins from mouse adipose tissue

PPARs (peroxisome proliferator-activated receptors) are a family of transcription factors belonging to the nuclear hormone receptor superfamily. Widely expressed in vertebrates, PPARs play critical roles in metabolism and differentiation of a number of cell types.

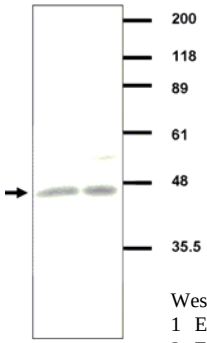
The PPAR γ subtype was originally identified as a factor binding to a fatty acid specific enhancer of the aP2 gene. PPAR-γ actions are mediated by three isoforms resulting from alternative promoter selection and alternative splicing. PPAR-γ 1 is widely expressed while PPAR-γ 2 expression is restricted to adipose tissue and PPAR-γ 3 expression is restricted to adipose tissue, macrophage, and colon.

PPAR γ participates in adipose cell differentiation and energy storage.

Recently, these roles of PPAR γ have focused attention on PPAR γ as a target of the anti-diabetic thiazolidinedione class of drugs.

Code	Host	Size	Application
KAL-KG113	Rabbit	100ug	WB

Anti Human AdipoR1 Polyclonal Antibody



Western blotting
1 Extracted proteins from mouse muscle
2 Extracted proteins from mouse heart

Obesity is a common etiology of diabetes mellitus and other diseases. Certain adipocytokines are considered beneficial due to their ability to enhance insulin sensitivity, while others, considered detrimental, enhance insulin resistance.

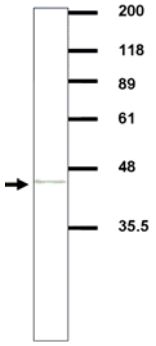
The beneficial adipocytokine adiponectin displays both anti-diabetic and anti-arteriosclerotic effects.

Two distinct adiponectin receptors have been identified. Both AdipoR1 and AdipoR2 are seven-pass transmembrane receptors but are structurally, topologically, and functionally distinct from G-protein coupled receptors (GPCR). AdipoR1 is most abundant in muscle whereas AdipoR2 is most abundant in liver. Both receptors promote fatty acid oxidation and glucose uptake by AMP-activated protein kinase and PPAR α.

PPAR agonists are reported to increase expression of activated adiponectin. PPAR α agonists also increase expression of adiponectin receptors. Such findings have focused attention on the role of AdipoR1 in PPAR agonist development.

Code	Host	Size	Application
KAL-KG114	Rabbit	100ug	WB

Anti Human β 3-AR Polyclonal Antibody



Western blotting
Extracted protein from mouse adipose tissue

The neurotransmitter/hormone adrenaline (epinephrine, adrenalin) plays a central role in the mammalian stress response, increasing heart rate, raising blood pressure, and increasing blood glucose levels upon entering the blood stream.

Adrenaline is secreted primarily by the adrenal medulla. Adrenaline activates both α-adrenergic receptors and β-adrenergic receptors. Three subtypes of beta adrenergic receptors are known, β 1, β 2, β 3, expressed primarily in heart, respiratory tissue, and adipose tissue, respectively.

β 3-receptors are particularly abundant in brown adipocytes and play important roles in lipolysis and theremoregulation. Recently this receptor has received attention from researchers intereseted in type 2 diabetes mellitus and obesity. It is also being considered as a therapertic target for heart failure.

Code	Host	Size	Application
KAL-KG115	Rabbit	100ug	WB

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COSMO BIO CO., LTD.
Inspiration for Life Science
Suite 101, 2792 Loker Ave. W., Carlsbad, CA 92010, USA
http://www.cosmobio.co.jp e-mail : info@cosmobiousa.com
Phone : +1-760-431-4600 FAX : +1-760-431-4604