



Prostate Specific Membrane Antigen(PSMA) Rabbit mAb

Catalog No	YP-rAb-17718
Isotype	IgG
Reactivity	Human,Mouse,Rat
Applications	WB,IHC,IF,IP,ELISA
Gene Name	FOLH1 FOLH NAALAD1 PSM PSMA GIG27
Protein Name	Glutamate carboxypeptidase 2 (Cell growth-inhibiting gene 27 protein) (Folate hydrolase 1) (Folylpoly-gamma-glutamate carboxypeptidase) (FGCP) (Glutamate carboxypeptidase II) (GCPII) (Membrane glutamate carboxypeptidase) (mGCP) (N-acetylated-alpha-linked acidic dipeptidase I) (NAALADase I) (Prostate-specific membrane antigen) (PSM) (PSMA)
Purification Process	Protein A
Specificity	Endogenous
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Source	Monoclonal, Rabbit,IgG
Dilution	IHC 1:200-1:1000; WB 1:2000-1:10000; IF 1:200-1:1000; ELISA 1:5000-1:20000; IP 1:50-1:200; Note: For IHC, we suggest antigen retrieval with TE buffer pH 9.0
Concentration	0.5 mg/ml
Purity	≥90%
Storage Stability	-15° C to -25° C/1 year(Do not lower than -25° C)
Synonyms	
Observed Band	84kD
Calculated Molecular Weight	84kD
Cell Pathway	Membrane
Tissue Specificity	Highly expressed in prostate epithelium. Detected in urinary bladder, kidney, testis, ovary, fallopian tube, breast, adrenal gland, liver, esophagus, stomach, small intestine, colon and brain (at protein level). Detected in the small intestine, brain, kidney, liver, spleen, colon, trachea, spinal cord and the capillary endothelium of a variety of tumors. Expressed specifically in jejunum brush border membranes. In the brain, highly expressed in the ventral striatum and brain stem. Also expressed in fetal liver and kidney. Isoform PSMA' is the most abundant form in normal prostate. Isoform PSMA-1 is the most abundant form in primary prostate tumors. Isoform PSMA-3 is also found in normal prostate as well as in brain and liver. Isoform PSMA-9 is specifically expressed in prostate cancer.




Function

Alternative products: Experimental confirmation may be lacking for some isoforms. Catalytic activity: Release of an unsubstituted, C-terminal glutamyl residue, typically from Ac-Asp-Glu or folylpoly-gamma-glutamates. cofactor: Binds 2 zinc ions per subunit. Required for NAALADase activity. Domain: The NAALADase activity is found in the central region, the dipeptidyl peptidase IV type activity in the C-terminal. enzyme regulation: The NAALADase activity is inhibited by beta-NAAG, quisqualic acid, 2-(phosphonomethyl) pentanedioic acid (PMPA) and EDTA. Activated by cobalt. Function: Also exhibits a dipeptidyl-peptidase IV type activity. In vitro, cleaves Gly-Pro-AMC. Function: Has both folate hydrolase and N-acetylated-alpha-linked-acidic dipeptidase (NAALADase) activity. Has a preference for tri-alpha-glutamate peptides. In the intestine, required for the uptake of folate. In the brain, modulates excitatory neurotransmission through the hydrolysis of the neuropeptide, N-aceylaspartylglutamate (NAAG), thereby releasing glutamate. Isoforms PSM-4 and PSM-5 would appear to be physiologically irrelevant. Involved in prostate tumor progression. induction: In the prostate, up-regulated in response to androgen deprivation. miscellaneous: PSMA is used as a diagnostic and prognostic indicator of prostate cancer, and as a possible marker for various neurological disorders such as schizophrenia, Alzheimer disease and Huntington disease. polymorphism: Genetic variation in FOLH1 may be associated with low folate levels and consequent hyperhomocysteinemia. This condition can result in increased risk of cardiovascular disease, neural tube defects, and cognitive deficits. PTM: The first two amino acids at the N-terminus of isoform PSMA' appear to be cleaved by limited proteolysis. PTM: The N-terminus is blocked. similarity: Belongs to the peptidase M28 family. M28B subfamily. tissue specificity: Highly expressed in prostate epithelium. Also expressed, in the small intestine, brain, kidney, liver, spleen, colon, trachea, spinal cord and the capillary endothelium of a variety of tumors. Expressed specifically in jejunum brush border membranes. In the brain, highly expressed in the ventral striatum and brain stem. Also expressed in fetal liver and kidney. In the prostate, the PSMA' cytosolic isoform is the most abundant form in normal tissue, the membrane-bound PSMA-1 form in primary prostate tumors. The PSMA-2 isoform also found in normal prostate as well as in brain and liver.

Background

This gene encodes a type II transmembrane glycoprotein belonging to the M28 peptidase family. The protein acts as a glutamate carboxypeptidase on different alternative substrates, including the nutrient folate and the neuropeptide N-acetyl-l-aspartyl-l-glutamate and is expressed in a number of tissues such as prostate, central and peripheral nervous system and kidney. A mutation in this gene may be associated with impaired intestinal absorption of dietary folates, resulting in low blood folate levels and consequent hyperhomocysteinemia. Expression of this protein in the brain may be involved in a number of pathological conditions associated with glutamate excitotoxicity. In the prostate the protein is up-regulated in cancerous cells and is used as an effective diagnostic and prognostic indicator of prostate cancer. This gene likely arose from a duplication event of a nearby chromosomal region. Alter

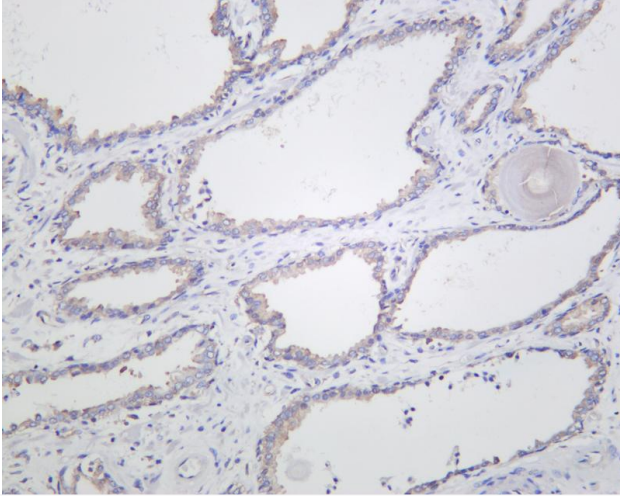
matters needing attention

Avoid repeated freezing and thawing!

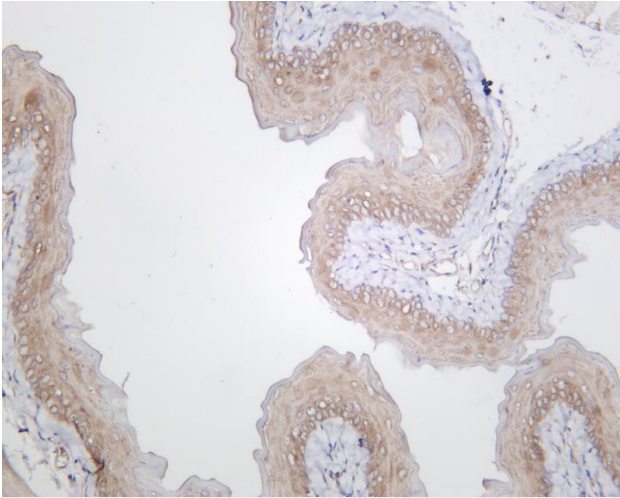
Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

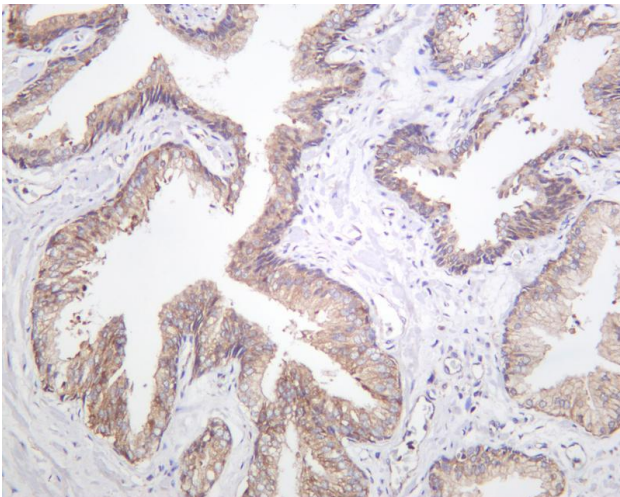




Human prostate was stained with anti-Prostate Specific Membrane Antigen (PSMA) rabbit antibody

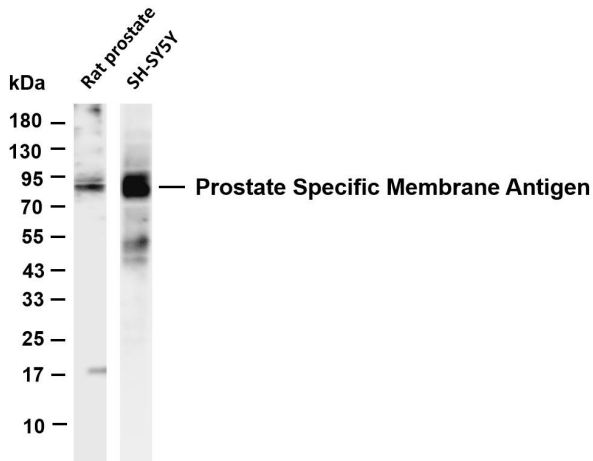


Mouse prostate was stained with anti-Prostate Specific Membrane Antigen (PSMA) rabbit antibody

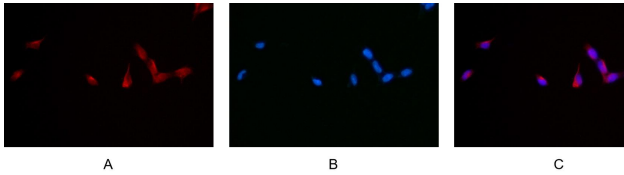


Human prostate carcinoma was stained with anti-Prostate Specific Membrane Antigen (PSMA) rabbit antibody





Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-Prostate Specific Membrane Antigen (PSMA) antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: Rat prostate Lane 2: SH-SY5Y Predicted band size: 84kDa Observed band size: 84kDa



Immunofluorescence analysis of HEK293. Picture A: Prostate Specific Membrane Antigen antibody (red). Picture B: DAPI (blue). Picture C: Merge of A+B

