Product datasheet

Anti-PSMA antibody ab41034

Overview

Product name  Anti-PSMA antibody  
Description  Rabbit polyclonal to PSMA  
Host species  Rabbit  
Tested applications  Suitable for: WB, ICC/IF  
Species reactivity  Reacts with: Human  
           Predicted to work with: Pig  
Immunogen  Synthetic peptide conjugated to KLH derived from within residues 1 - 100 of Human PSMA. Read Abcam's proprietary immunogen policy (Peptide available as ab41442.)  
Positive control  ab41034 gave a positive signal in LNCaP (human prostate carcinoma cell line) Whole Cell Lysate. This antibody gave a positive result when used in the following methanol fixed cell lines: DU145.

Properties

Form  Liquid  
Storage instructions  Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. 
Storage buffer  pH: 7.40  
Preservative: 0.02% Sodium azide  
Constituent: PBS  

Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help.

Purity  Immunogen affinity purified  
Clonality  Polyclonal  
Isotype  IgG

Applications

Our Abpromise guarantee covers the use of ab41034 in the following tested applications.
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. Isoform PSM-4 and isoform PSM-5 would appear to be physiologically irrelevant. Involved in prostate tumor progression. Also exhibits a dipeptidyl-peptidase IV type activity. In vitro, cleaves Gly-Pro-AMC.

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-2 is also found in normal prostate as well as in brain and liver. Isoform PSMA-9 is specifically expressed in prostate cancer.

Sequence similarities
Belongs to the peptidase M28 family. M28B subfamily.

Domain
The NAALADase activity is found in the central region, the dipeptidyl peptidase IV type activity in the C-terminal.

Post-translational modifications
The first two amino acids at the N-terminus of isoform PSMA’ appear to be cleaved by limited proteolysis. The N-terminus is blocked.

Cellular localization
Cytoplasm and Cell membrane.

Images

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<th>Notes</th>
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<td>WB</td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 110 kDa (predicted molecular weight: 84 kDa).</td>
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<tr>
<td>ICC/IF</td>
<td>Use a concentration of 5 µg/ml.</td>
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Immunocytochemistry/ Immunofluorescence - Anti-PSMA antibody (ab41034)

ICC/IF image of ab41034 stained DU145 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab41034 at 5µg/ml overnight at +4°C. The secondary antibody (green) was DyLight® 488 goat anti-rabbit (ab96899) IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

Western blot - Anti-PSMA antibody (ab41034)

Anti-PSMA antibody (ab41034) at 1 µg/ml + LNCaP (human prostate carcinoma cell line) Whole Cell Lysate at 10 µg

Secondary

Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Performed under reducing conditions.

**Predicted band size:** 84 kDa

**Observed band size:** 110 kDa

*why is the actual band size different from the predicted?*

PSMA contains a number of potential glycosylation sites, which is thought to be the reason why it runs at 110 kDa.

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