Human PSMA/FOLH1/NAALADase I Antibody

Monoclonal Mouse IgG_{2A} Clone # 460420

Catalog Number: MAB4234

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human PSMA/FOLH1/NAALADase I in direct ELISA and Western blot. In direct ELISAs, less than 10% cross-reactivity with recombinant human (rh) NAALADase-like 2 and no cross-reactivity with rhNAALADase-like 1, rhNAALADase-like 3, recombinant mouse (rm) NAALADase I, or rmNAALAase-like 2 is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 460420
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human PSMA/FOLH1/NAALADase I Lys44-Ala750 Accession # Q04609
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

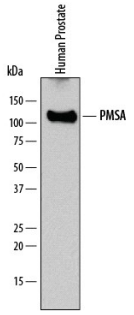
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below

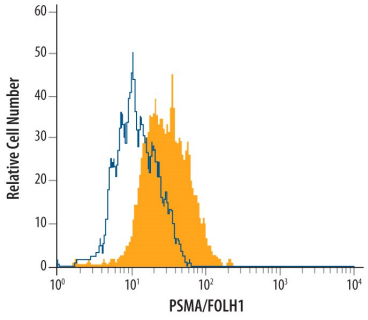
DATA

Western Blot



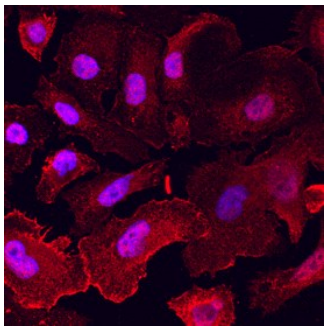
Detection of Human NAALADase I by Western Blot.
Western blot shows lysates of human prostate tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human PSMA/FOLH1/NAALADase I Monoclonal Antibody (Catalog # MAB4234) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for NAALADase I at approximately 120 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



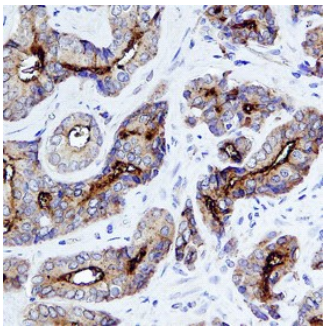
Detection of NAALADase I in LNCaP Human Cell Line by Flow Cytometry.
LNCaP human prostate cancer cell line was stained with Mouse Anti-Human PSMA/FOLH1/NAALADase I Monoclonal Antibody (Catalog # MAB4234, filled histogram) or isotype control antibody (Catalog # MAB003, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B).

Immunocytochemistry



NAALADase I in PC-3 Human Cell Line.
NAALADase I was detected in immersion fixed PC-3 human prostate cancer cell line using Mouse Anti-Human PSMA/FOLH1/NAALADase I Monoclonal Antibody (Catalog # MAB4234) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cell surfaces and cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



NAALADase I in Human Prostate.
NAALADase I was detected in formalin fixed paraffin-embedded sections of human prostate using Mouse Anti-Human PSMA/FOLH1/NAALADase I Monoclonal Antibody (Catalog # MAB4234) at 1 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to glandular epithelial cells. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Human prostate-specific membrane antigen (PSMA), a tumor marker in prostate cancer encoded by the FOLH1 gene, is a type II transmembrane zinc metallopeptidase that is most highly expressed in the nervous system, prostate, kidney, and small intestine (1, 2). The enzyme is also known as glutamate carboxypeptidase II (GCPII), folate hydrolase 1, folypoly-gamma-glutamate carboxypeptidase (FGCP), and N-acetylated-alpha-linked acidic dipeptidase I (NAALADase I). In the brain, PSMA hydrolyzes the neurotransmitter N-acetyl-Asp-Glu to produce glutamate, another neurotransmitter. Inhibition of brain PSMA activity is considered to be a promising approach for the treatment of neurological disorders associated with glutamate excitotoxicity, such as stroke, chronic pain, and amyotrophic lateral sclerosis (3). Intestinal PSMA hydrolyzes folylpoly-γ-glutamates, facilitating the uptake of folate (4).

References:

1. Silver, D.A. *et al.* (1997) Clin. Cancer Res. **3**:81.
2. Carter, R.E. *et al.* (1996) Pro. Natl. Acad. Sci. USA. **93**:749.
3. Jackson, P.F. and Slusher, B.S. (2001) Curr. Med. Chem. **8**:949.
4. Heston, W.D. (1997) Urology **49**:104.