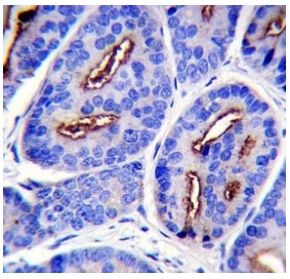
# PSMA Antibody / FOLH1 (F43183)

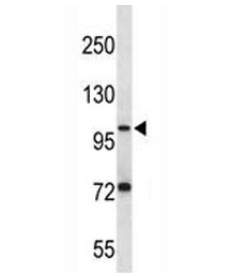
| Catalog No. | Formulation | Size |
|---|---|---|
| F43183-0.4ML | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.4 ml |
| F43183-0.08ML | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.08 ml |

**Bulk quote request**

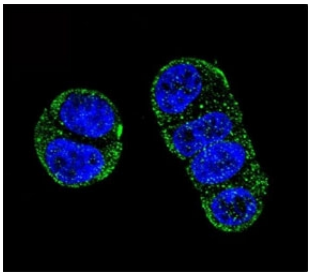
| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Predicted Reactivity** | Mouse, Rat, Pig |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit Ig |
| **Purity** | Antigen affinity |
| **UniProt** | Q04609 |
| **Applications** | Western blot: 1:1000<br>IHC (Paraffin): 1:10-1:50<br>Immunofluorescence: 1:10-1:50 |
| **Limitations** | This PSMA/FOLH1 antibody is available for research use only. |



Immunohistochemistry analysis of PSMA/FOLH1 antibody in human prostate carcinoma tissue. Formalin-fixed, paraffin-embedded human prostate carcinoma tissue was stained using PSMA antibody. Heat-induced epitope retrieval was performed by steaming tissue sections in citrate buffer, pH 6.0, for 20 minutes, followed by cooling prior to antibody incubation. Brown chromogenic signal is observed predominantly along the apical and membranous surfaces of malignant glandular epithelial cells, with luminal accentuation in tumor glands, while surrounding stromal regions show minimal staining. This staining pattern reflects epithelial-associated expression of PSMA in prostate carcinoma tissue.




PSMA antibody western blot analysis in ZR-75-1 lysate. Observed molecular weight ~ 100 kDa.



PSMA Antibody ZR-75-1 Cell IF. Confocal immunofluorescent analysis of PSMA antibody with ZR-75-1 cells followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). DAPI was used as a nuclear counterstain (blue).

## Description

PSMA antibody detects FOLH1, also known as Prostate Specific Membrane Antigen, a transmembrane glycoprotein with enzymatic functions relevant to folate metabolism, neurotransmission, and epithelial cell biology. The UniProt recommended name is Glutamate carboxypeptidase 2. FOLH1 is widely recognized for its enriched expression in prostate epithelium and its marked upregulation in prostate cancer, which has made it a major biomarker and research target in oncology. Beyond the prostate, FOLH1 contributes to nutrient processing, neuronal glutamate regulation, and small intestinal folate absorption, giving it a broad functional impact across tissues.

FOLH1 is a type II transmembrane protein consisting of a short intracellular domain, a single-pass membrane region, and a large extracellular catalytic domain. This extracellular portion carries out two major enzymatic activities: N-acetylated alpha-linked acidic dipeptidase activity, which modulates levels of neuropeptides and glutamatergic substrates, and folate hydrolase activity, which assists in liberating dietary folates for intestinal absorption. These dual enzymatic roles position FOLH1 at the intersection of nutrient metabolism and neurotransmitter regulation, and they contribute to its diverse biological relevance.

The FOLH1 gene is located on chromosome 11p11.2 and is expressed in several tissues, with highest expression in prostate, kidney, small intestine, and brain. In the small intestine, FOLH1 participates in processing dietary folates by cleaving gamma-linked glutamates, enabling uptake through folate transport pathways. In the central nervous system, FOLH1 activity regulates extracellular glutamate pools and may influence synaptic signaling and neuronal excitability. In renal tissue, FOLH1 contributes to epithelial processing of filtered substrates and may play broader roles in nutrient salvage.

In prostate biology, FOLH1 expression is tightly regulated under normal conditions and localized to the apical membrane of secretory epithelial cells. In prostate cancer, however, expression becomes markedly elevated and extends across the entire cell surface. This redistribution is associated with loss of polarity and increased tumor aggressiveness. Because of its strong and consistent overexpression in prostate tumors, FOLH1 has become a major biomarker for early detection, disease monitoring, and targeted imaging. Radiolabeled ligands that bind FOLH1 are widely used in diagnostic imaging to localize metastatic prostate cancer and evaluate disease burden.

FOLH1 is also implicated in tumor biology beyond the prostate. Its enzymatic processing of glutamate containing substrates may influence tumor microenvironment acidity, signaling pathways that depend on glutamate intermediates, or stromal interactions that contribute to tumor progression. Aberrant expression of FOLH1 has been reported in kidney, colon, and certain neuroendocrine tumors. Research continues to explore whether FOLH1 supports metabolic adaptation or provides selective advantages to malignant cells.

In non-oncologic biology, FOLH1 is essential for efficient folate utilization. Folates play key roles in DNA synthesis, methylation pathways, and amino acid metabolism. Defects in folate processing can impair cellular proliferation and contribute to developmental abnormalities or metabolic imbalance. FOLH1's involvement in both folate hydrolysis and glutamate handling has made it relevant to research in nutrition, gastrointestinal physiology, and neuronal signaling.

Because of its broad roles, FOLH1 is studied across multiple fields including cancer biology, metabolism, neurobiology, and epithelial physiology. PSMA antibody supports these investigations by enabling detection of FOLH1 expression in cells and tissues. It is validated for use in relevant research applications aimed at detecting Prostate Specific Membrane Antigen. NSJ Bioreagents provides PSMA antibody reagents suitable for oncology, metabolism, developmental research, and studies of epithelial function.

Researchers studying prostate cancer biology, PSMA-associated signaling, and folate metabolism pathways may also be interested in our FOLH1 Antibody / Prostate Cancer and PSMA Marker page featuring validated immunohistochemistry, western blot, and protein microarray specificity data for prostate cancer research.

## Application Notes

Titration of the PSMA/FOLH1 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

## Immunogen

A portion of amino acids 161-190 from the human protein was used as the immunogen for this PSMA/FOLH1 antibody.

## Storage

Aliquot the PSMA/FOLH1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.


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