PRODUCT INFORMATION

PSMA Extracellular Domain (human, recombinant) - Biotinylated

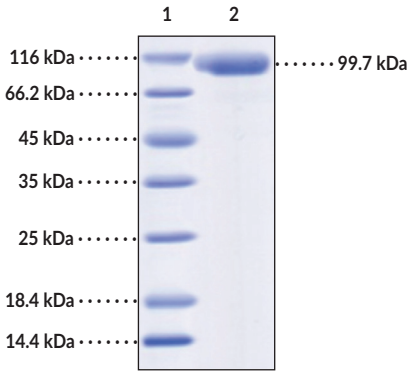
Item No. 42001

Overview and Properties

Synonyms:	Folate Hydrolase 1, FOLH1, GCPII, Glutamate Carboxypeptidase II, NAALADase, Prostate-specific Membrane Antigen
Source:	Recombinant human N-terminal His-tagged biotinylated PSMA extracellular domain expressed in HEK293 cells
Amino Acids:	44-750
Molecular Weight:	82.72 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Bioactivity:	See figure for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: PSMA Extracellular Domain

SDS-PAGE Analysis of PSMA Extracellular Domain. This protein has a calculated molecular weight of 82.72 kDa.

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Description

Prostate-specific membrane antigen (PSMA) is a type II membrane glycoprotein and glutamate-preferring carboxypeptidase with roles in folic acid utilization and metabolism that is encoded by *FOLH1* in humans.[1,2] It is composed of a short intracellular sequence, a transmembrane domain, and a large extracellular region, which contains enzymatic domains.[1,4] PSMA is expressed in prostate epithelial cells and in the proximal small intestine, where it promotes folate uptake by cleaving glutamate from folypoly-γ-glutamate, and in the central nervous system, where it regulates neurotransmitter activity by cleaving glutamate from N-acetyl-aspartyl-glutamate (NAAG).[2,5] It is also highly overexpressed in prostate carcinomas and in the neovasculature of various renal, colon, and breast carcinomas to support the need for folate in these rapidly dividing cells.[2,5] Expression of *FOLH1* increases under androgen deprivation conditions *in vitro* and *in vivo* and positively correlates with cancer aggressiveness in patients with prostate cancer.[3] PSMA PET imaging is commonly used in the diagnosis and staging of prostate cancer, as well as to assess therapeutic response.[4] Cayman's PSMA Extracellular Domain (human, recombinant) - Biotinylated protein consists of 732 amino acids and has a calculated molecular weight of 82.72 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 99.7 kDa due to glycosylation.

References

1. Chang, S.S. Overview of prostate-specific membrane antigen. *Rev. Urol.* **10(Suppl. 10)**, S13-S18 (2004).
2. Mannweiler, S., Amersdorfer, P., Trajanoski, S., *et al*. Heterogeneity of prostate-specific membrane antigen (PSMA) expression in prostate carcinoma with distant metastasis. *Pathol. Oncol. Res.* **15(2)**, 167-172 (2009).
3. Chang, S.S. Overview of prostate-specific membrane antigen. *Rev. Urol.* **10(Suppl. 10)**, S13-S18 (2004).
4. de Galiza Barbosa, F., Queiroz, M.A., Nunes, R.F., *et al*. Nonprostatic diseases on PSMA PET imaging: A spectrum of benign and malignant findings. *Cancer Imaging* **20(1)**, 23 (2020).
5. Ghosh, A. and Heston, W.D.W. Tumor target prostate specific membrane antigen (PSMA) and its regulation in prostate cancer. *J. Cell. Biochem.* **91(3)**, 528-239 (2004).

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