

DM1035**Monoclonal Antibody to Kallikrein-3 / PSA / KLK3 - Purified**

Alternate names:	Gamma-seminoprotein, P-30 antigen, Prostate-specific antigen, Semenogelase
Quantity:	0.5 mg
Background:	Kallikreins are a subgroup of serine proteases having diverse physiological functions. Growing evidence suggests that many kallikreins are implicated in carcinogenesis and some have potential as novel cancer and other disease biomarkers. This gene is one of the fifteen kallikrein subfamily members located in a cluster on chromosome 19. Its protein product is a protease present in seminal plasma. It is thought to function normally in the liquefaction of seminal coagulum, presumably by hydrolysis of the high molecular mass seminal vesicle protein. Serum level of this protein, called PSA in the clinical setting, is useful in the diagnosis and monitoring of prostatic carcinoma. Alternate splicing of this gene generates two transcript variants encoding different isoforms. Additional transcript variants have been described, but it is unclear if these transcripts are normally expressed or if they are specific to benign or malignant tumors.
Uniprot ID:	P07288
NCBI:	NP_001025218.1
GeneID:	354
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), AM03095PU-N
Clone:	CHYH1
Immunogen:	Human Prostate Specific Antigen (PSA)
Format:	State: Lyophilized purified IgG fraction Purification: Affinity Chromatography on Protein G Buffer System: 0.01M PBS, pH 7.0 without preservatives Reconstitution: Restore with double distilled water to a final concentration of 1.0 mg/ml.
Applications:	ELISA: In Sandwich ELISA this antibody can be used as a Capture antibody in combination with a Monoclonal tracer/detection antibody Clone CHYH2 (HRP conjugate Cat.-No DM1036HRP, TMB as substrate). <i>Recommended Capture Coating Dose:</i> 0.5-1.0 µg/well. Under the suggested conditions approximately 1 ng/ml of PSA in human serum can be detected with an assay range of 0-200 ng/ml. Note: Matched pair antibodies are DM1035 (Clone CHYH1) and DM1036 (Clone CHYH2). Immunohistochemistry on Frozen and Formalin-Fixed Paraffin Sections (ABC method). Western blot: 10 µg/ml allows visualization of 1 µg/lane Human PSA.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

DM1035 reacts with PSA. This antibody is reactive to normal prostate, benign prostate hyperplasia and prostate malignant carcinoma. It has not reacted with other normal tissues tested.

Species Reactivity:

Tested: Human.

Storage:

Upon receipt, store (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Chikkaveeraiah BV, Bhirde A, Malhotra R, Patel V, Gutkind JS, Rusling JF. Single-wall carbon nanotube forest arrays for immunoelectrochemical measurement of four protein biomarkers for prostate cancer. *Anal Chem*. 2009 Nov 1;81(21):9129-34. doi: 10.1021/ac9018022. PubMed PMID: 19775154.
2. Yu X, Munge B, Patel V, Jensen G, Bhirde A, Gong JD, et al. Carbon nanotube amplification strategies for highly sensitive immunodetection of cancer biomarkers. *J Am Chem Soc*. 2006 Aug 30;128(34):11199-205. PubMed PMID: 16925438.
3. Krishnan S, Mani V, Wasalathanthri D, Kumar CV, Rusling JF. Attomolar detection of a cancer biomarker protein in serum by surface plasmon resonance using superparamagnetic particle labels. *Angew Chem Int Ed Engl*. 2011 Feb 1;50(5):1175-8. doi: 10.1002/anie.201005607. Epub 2010 Dec 22. PubMed PMID: 21268221.
4. Mani V, Chikkaveeraiah BV, Patel V, Gutkind JS, Rusling JF. Ultrasensitive immunosensor for cancer biomarker proteins using gold nanoparticle film electrodes and multienzyme-particle amplification. *ACS Nano*. 2009 Mar 24;3(3):585-94. doi: 10.1021/nn800863w. PubMed PMID: 19216571.
5. Mani V et al. Highly efficient binding of paramagnetic beads bioconjugated with 100,000 or more antibodies to protein-coated surfaces. *Anal Chem*. 2012 Dec 4;84(23):10485-91.
6. Chikkaveeraiah BV, Bhirde A, Malhotra R, Patel V, Gutkind JS, Rusling JF. Single-wall carbon nanotube forest arrays for immunoelectrochemical measurement of four protein biomarkers for prostate cancer. *Anal Chem*. 2009 Nov 1;81(21):9129-34. doi: 10.1021/ac9018022. PubMed PMID: 19775154.
7. Chikkaveeraiah BV, Mani V, Patel V, Gutkind JS, Rusling JF. Microfluidic electrochemical immunoarray for ultrasensitive detection of two cancer biomarker proteins in serum. *Biosens Bioelectron*. 2011 Jul 15;26(11):4477-83. doi: 10.1016/j.bios.2011.05.005. Epub 2011 May 11. PubMed PMID: 21632234.
8. Jeong-Mi Moon et al. A nanowirebased label-free immunosensor: Direct incorporation of a PSA antibody in electropolymerized polypyrrole. *Biosensors and Bioelectronics*. Volume 57, 15 July 2014, Pages 157–161.

Pictures:

Western Blot: Detection of PSA antigen (100ng/well) using 1ug/mL mouse anti-human PSA mAb clone CHYH1.

