

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat PSMA1 in Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human PSMA1 Gln16-His263 Accession # P25786
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.

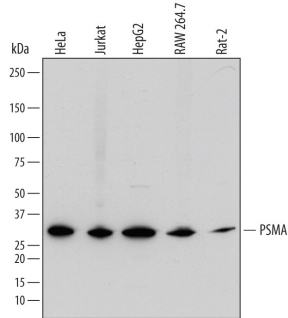
APPLICATIONS

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	0.5 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

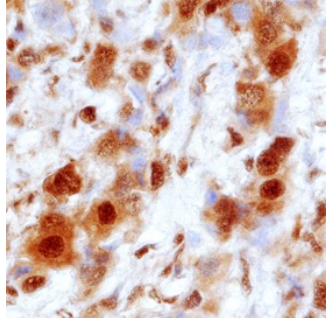
DATA

Western Blot



Detection of Human, Mouse, and Rat PSMA1 by Western Blot. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line, Jurkat human acute T cell leukemia cell line, HepG2 human hepatocellular carcinoma cell line, RAW 264.7 mouse monocyte/macrophage cell line, and Rat-2 rat embryonic fibroblast cell line. PVDF membrane was probed with 0.5 µg/mL of Sheep Anti-Human/Mouse/Rat PSMA1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7565) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for PSMA1 at approximately 30 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



PSMA1 in Human Breast Cancer Tissue. PSMA1 was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Sheep Anti-Human/Mouse/Rat PSMA1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7565) at 1.7 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm and nuclei. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
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. <ul style="list-style-type: none"> • 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.

BACKGROUND

PSMA-1 (Proteasome subunit alpha type-1; also 30 kDa prosomal protein/PROS30, HC2, proteasome component C2/PSC2, PSMA-1/α6, and NU) is a 30 kDa member of the peptidase T1A family of enzymes. It is widely expressed, and found in both cytoplasm and nucleus. Short-lived intracellular molecules (typically proteins) are enzymatically degraded by the 26S proteasome. This is a multisubunit 3D complex that is over 2000 kDa in size, and recognizes previously ubiquitinated proteins. The middle of this 26S complex is shaped like a barrel with four staves that run circumferentially rather than longitudinally. Each staff contains seven subunits, with β-type subunits generating the two center staves, and α-type subunits comprising the outer, or flanking staves. The function of the barrel, also known as the 20S protease core "particle", is to enzymatically cleave substrates that enter its chamber. For proteins, this is done by β-type subunits. The 26S complex also cleaves mRNA, and this is mediated by α-type subunits. PSMA-1/α6 does not cleave mRNA, but it does positively regulate PSMA5/α5 catalytic activity. Notably, PSMA-1 has also been reported to bind to LPS. Human PSMA-1 is 263 amino acids (aa) in length. It contains an acetylated Met at position #1, plus three utilized phosphorylation sites at Tyr6, Thr11, and Ser16. There are at least four potential isoform variants. Three utilize alternative start sites. One shows a start site at Met140, while a second and third initiates translation at sites 6 and 43 aa upstream of the standard site, respectively. A fourth isoform possess a 16 aa substitution for aa 115-263. Over aa 16-263, human PSMA-1 shares 98% aa sequence identity with mouse PSMA-1.