Human Pappalysin-1/PAPP-A Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF2487

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Pappalysin-1/PAPP-A in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 5% cross-reactivity with recombinant human PAPP-A2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Pappalysin-1/PAPP-A Glu82-Asp1214 Accession # Q13219
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.

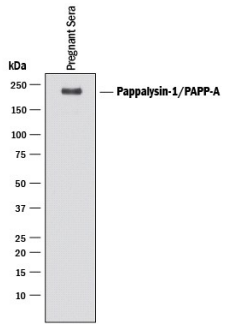
APPLICATIONS

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	0.1 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Pappalysin-1/PAPP-A (Catalog # 2487-ZN), see our available Western blot detection antibodies

DATA

Western Blot



Detection of Human Pappalysin-1/PAPP-A by Western Blot. Western blot shows lysate of human pregnant sera. PVDF membrane was probed with 0.1 µg/mL of Goat Anti-Human Pappalysin-1/PAPP-A Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2487) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Pappalysin-1/PAPP-A at approximately 200 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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.

BACKGROUND

Pappalysins belong to a fifth family of metzincins that consists of ADAMs/ADAMTSs, MMPs, astacins and serrylysins (1). PAPP-A is an important pregnancy protein and increases in plasma by a factor of about 150 during pregnancy as compared to the nonpregnant state. PAPP-A is also a major marker of Down syndrome in the first trimester of pregnancy because maternal serum levels of PAPP-A are significantly reduced when a fetus affected by Down syndrome is present (2). PAPP-A cleaves Insulin-like Growth Factor-Binding Protein-4 and -5 (IGFBP-4 and -5) at a single site, resulting in the release of bioactive IGF (3). Lack of IGFBP-4 cleavage in embryonic fibroblasts derived from PAPP-A knockout mice indicates that PAPP-A functions as a physiological IGFBP-4 protease (4). Three Lin12-Notch repeats (LNR) in the PAPP-A protein bind Ca^{2+} and are required for the cleavage of IGFBP-4, not IGFBP-5, by PAPP-A (5). The C-terminal LNR (residues 1476 to 1503) is not present in rhPAPP-A (residues 82 to 1214), which starts at the N-terminus of the mature chain and ends before the five Sushi (SCR) modules. As an active protease, rhPAPP-A cleaves IGFBP-5, which can be inhibited by 1,10-phenanthroline.

References:

1. Boldt, H.B. *et al.* (2001) Biochem. J. **358**:359.
2. Fialova L. and I.M. Malbohan (2002) Bratisl. Lek. Listy **103**:194.
3. Laursen, L.S. *et al.* (2001) FEBS Lett. **504**:36.
4. Conover, C.A. *et al.* (2004) Development **131**:1187.
5. Boldt, H.B. *et al.* (2004) J. Biol. Chem. **279**:38525.

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