



Recombinant Human PAPP-A

Catalog Number: GR119217

Background

Pappalysin-1, also known as pregnancy-associated plasma protein A, is a protein encoded by the PAPP gene in humans.[1,2] PAPP is a secreted protease whose main substrate is insulin-like growth factor binding proteins (IGFBPs).[3] Pappalysin-1 is also used in screening tests for Down syndrome.[4] PAPP's proteolytic function is activated upon collagen binding. It is thought to be involved in local proliferative processes such as wound healing and bone remodeling. Low plasma level of this protein has been suggested as a biochemical marker for pregnancies with aneuploid fetuses. For example, low PAPP may be commonly seen in prenatal screening for Down syndrome.^[4] Low levels may alternatively predict issues with the placenta, resulting in adverse complications such as intrauterine growth restriction, preeclampsia, placental abruption, premature birth, or fetal death. PAPP-A has been shown to interact with major basic protein^{[2][4]} and specifically inhibits the third component of human complement (C3).[6] PAPP-A interacts with serine proteinases.[7] In STEMI patients, Stanniocalcin-2 and IGFBP-4 emerged as independent predictors of all-cause death and readmission due to HF. The Stanniocalcin-2/PAPP-A/IGFBP-4 axis exhibits a significant role in STEMI risk stratification.[8]

References

1. Kristensen T, et al. (1994). *Biochemistry*. 33 (6): 1592–8.
2. Overgaard MT, et al. (2000) *J. Biol. Chem.* 275 (40): 31128–33.
3. Durham SK, et al. (1994). *J. Bone Miner. Res.* 9 (1): 111–7.
4. Breathnach FM, Malone FD (2007). *Curr. Opin. Obstet. Gynecol.* 19 (2): 176–82.
5. Overgaard MT, et al. (2003) *J. Biol. Chem.* 278 (4): 2106–17.
6. Bischof P, et al. (1984). *Placenta*. 5 (1): 1–7.
7. Zorin NA, et al. (1995). *Clin. Chim. Acta.* 239 (1): 47–55.
8. Cediël G, et al. (2018) *Cardiovasc Diabetol* 17 (1), 63



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Description

Quantity: 10 µg

Sources: Expressed in *E. coli*.

Composition: Thr857-Ala1088 with his tags

Accession #: NP_002572.2

Molecular weight: 26 kDa

Activity: Measured by its ability to cleave IGFBP-5. Recombinant Human Pappalysin-1/PAPP-A will cleave >50% of Recombinant Human IGFBP-5, as measured under the described conditions.

Endotoxin level: <1.0 EU per 1 µg of the protein by the LAL method.

Purity: > 95%, by SDS-PAGE under reducing conditions and visualized by silver staining.

Formulation: Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein.

Reconstitution: Reconstitute at 100 µg/ml in sterile PBS and store at -20°C ~ -70°C for up to 3 months.

Shipping and storage: The product is shipped at ambient temperature or with ice pad. Upon receipt, store it immediately at -20°C to avoid loss of activity and use it in 6 months.

Amino acid sequence

TLDEHLEIDAAMLTSTADTPLCLQCKPLKYKVVRRDPLQMDVASILHLNRKFVDMDLNLGVSQYQWVITISGTEESE
PSPAVTYIHGSGYCGDGI IQKDQGEQCDDMNKINGDGC SLFCRQEVSFN CIDEPSRCYFHDGDGVCEEFEQKTSIKD
CGVYTPQGFLDQWASNASVSHQDQQC PGWVI IQGPAASQVCR TKVIDLSEGISQHWY PCTISYPYSQLAQTTFWLR
A

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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NOT FOR USE IN HUMANS AND ANIMALS**