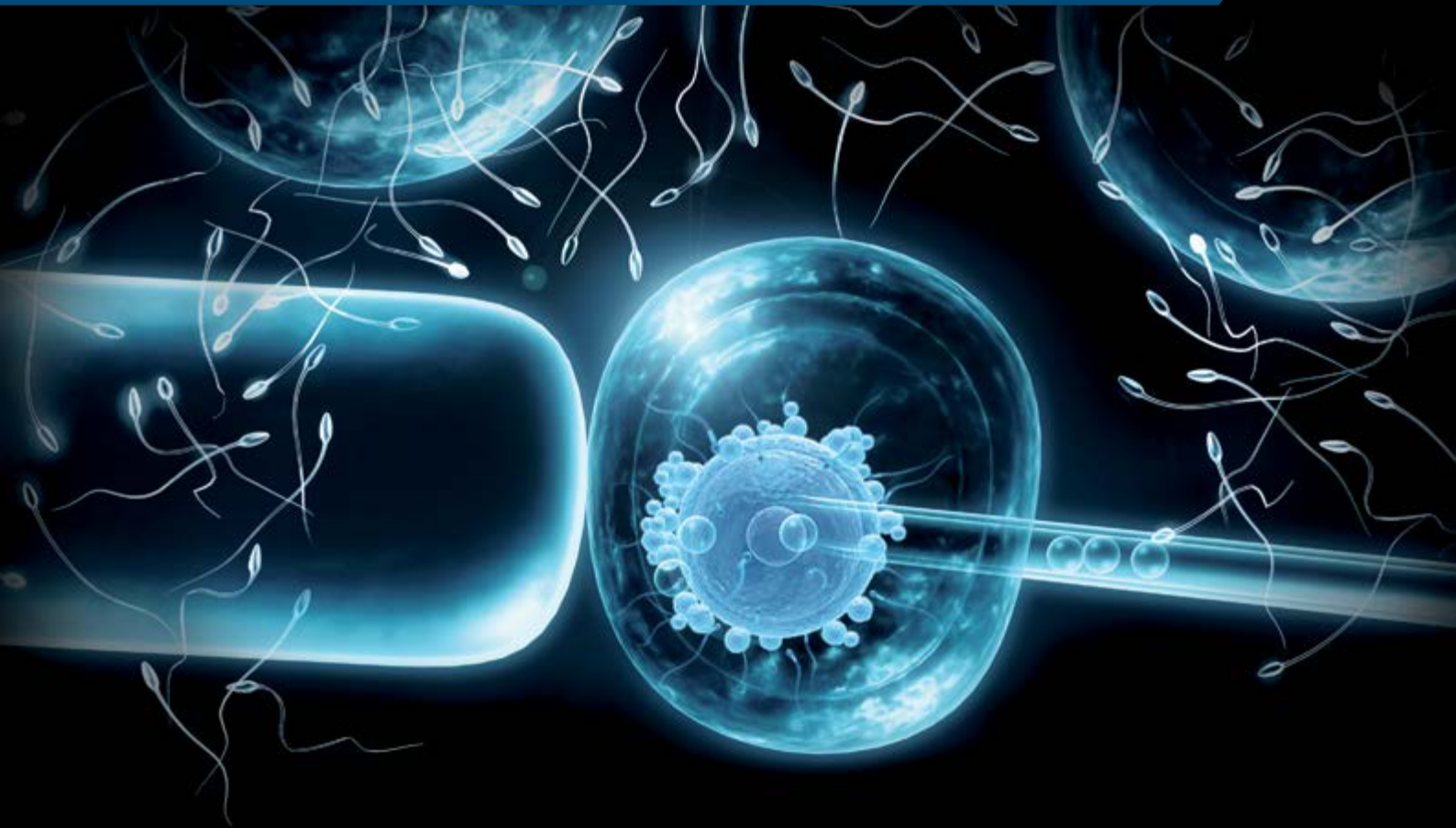


QUANTITATIVE DETERMINATION OF HUMAN PLACENTAL PROTEIN 13

NEW PRODUCT

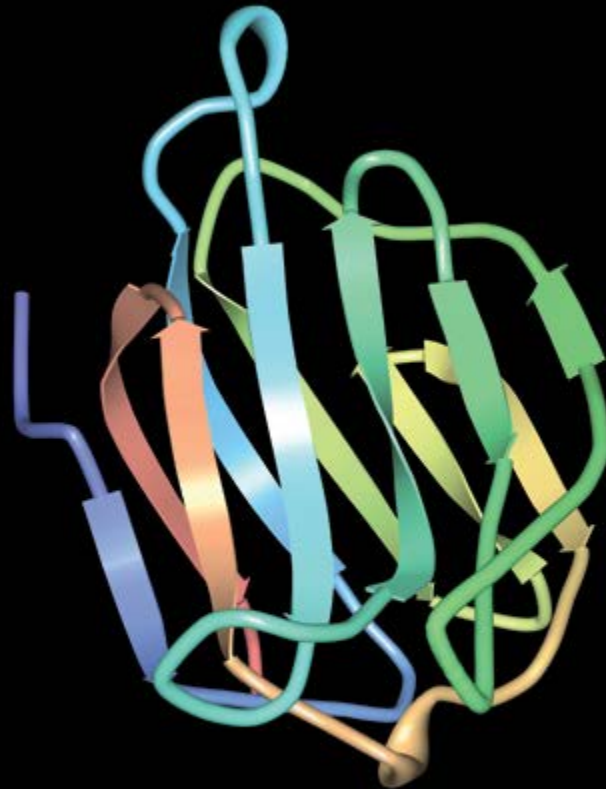
Human Placental protein 13 ELISA

- › High sensitivity (7.6 pg/ml)
- › Excellent analytical characteristics
- › Validated for serum, cord blood serum and placental tissue extract



REPRODUCTION

HUMAN PLACENTAL PROTEIN 13 ELISA



Introduction

Placental protein 13 (PP13, Galectin 13) is the member of the beta-galactoside binding S-type galectin superfamily, whose members are important in placenta implantation and remodelling of maternal arteries [2]. PP13 binds to beta-galactoside residues of several proteins on the cell surface, cytoskeleton and extracellular matrix, thereby generating various responses such as immune responses and influencing other functions like apoptosis and molecular recognition [1]. PP13, which is predominantly produced by placental tissue, possesses a conserved carbohydrate binding domain, to which two proteins Annexin-II and Actin-beta bind. These proteins are considered to play a key role in placentation and maternal artery remodelling respectively [2].

Human PP13 is a relatively small protein with 139 amino acids and is composed of two identical 16 kDa subunits held together by disulfide bonds [9]. PP13 was first isolated from placenta and especially from the syncytiotrophoblast in 1983 by Bohn et. al [10]. It is localized to the syncytiotrophoblast brush border membrane, and detected in maternal and cord blood [7]. Though it is found primarily in placenta, some PP13 expression was also detected in healthy spleen, kidney and

bladder tissue and in liver adenocarcinoma, neurogen tumour and malignant melanoma [9].

The serum levels of PP13 slowly increase during a normal pregnancy but abnormally low levels of PP-13 were detected in first trimester serum samples of women subsequently developing fetal growth restriction and preeclampsia, especially in cases with early onset. Elevated serum concentrations of PP-13 have been found in the second and third trimester in women with preeclampsia, intrauterine growth restriction (IUGR) and in preterm delivery. Another study concluded that first-trimester serum levels of PP13 may serve as a suitable marker for preterm preeclampsia but are weak for the prediction of severe preeclampsia and ineffective for mild preeclampsia at term [5].

QUANTITATIVE DETERMINATION OF HUMAN PLACENTAL PROTEIN 13

BioVendor Human Placental protein 13 ELISA (RD191254200R)

Intended use

The RD191254200R Human Placental protein 13 ELISA is a sandwich enzyme immunoassay for the quantitative measurement of human PP13.

- ▶ The total assay time is less than 3.5 hours
- ▶ The kit measures PP13 in serum, cord blood serum and placental tissue extract
- ▶ Assay format is 96 wells
- ▶ Standard is recombinant protein based
- ▶ Components of the kit are provided ready to use, concentrated or lyophilized

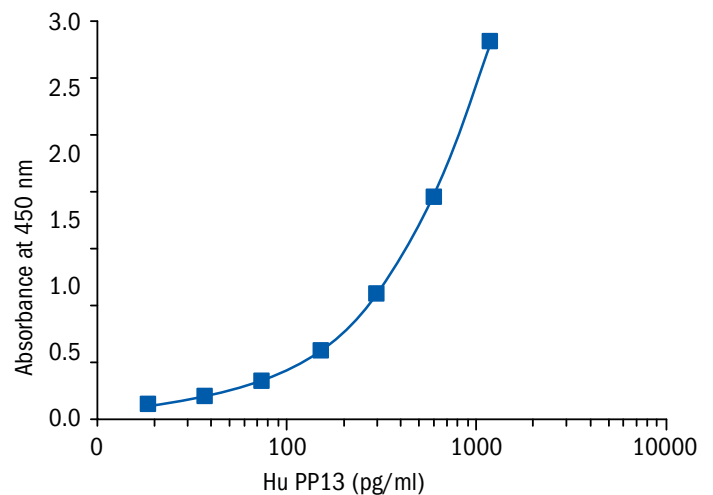
Clinical application

- ▶ Reproduction

HUMAN PLACENTAL PROTEIN 13 ELISA CAT. NO.: RD191254200R	
Assay format	Sanwich ELISA, Biotin-labelled antibody, 96 wells/kit
Samples	Serum, cord blood serum and placental tissue extract
Standards	18.75 to 1200 pg/ml
Limit of detection	7.6 pg/ml

Test principle

In the BioVendor Human Placental protein 13 ELISA, standards and samples are incubated in microtiterate wells pre-coated with polyclonal anti-human PP13 antibody. After 60 minute incubation and a washing, biotin labelled polyclonal anti-human PP13 antibody is added and incubated for 60 minutes with the captured PP13. After another washing, the streptavidin-HRP conjugate is added. After 30 min incubation and the last washing step, the remaining conjugate is allowed to react with the substrate solution (TMB). The reaction is stopped by addition of acidic solution and absorbance of the resulting yellow product is measured. The absorbance is proportional to the concentration of PP13. A standard curve is constructed by plotting absorbance values against concentrations of standards, and concentrations of unknown samples are determined using this standard curve.



HUMAN PLACENTAL PROTEIN 13 ELISA

Precision

Intra-assay (Within-Run) (n=8)

Sample	Mean (pg/ml)	SD (pg/ml)	CV (%)
1	252.61	10.12	4.0
2	393.30	8.56	2.2

Inter-assay (Run-to-Run) (n=6)

Sample	Mean (pg/ml)	SD (pg/ml)	CV (%)
1	449.97	33.06	7.3
2	149.22	12.08	8.1

Spiking recovery

Serum samples were spiked with different amounts of human PP13 and assayed.

Sample	Observed (pg/ml)	Expected (pg/ml)	Recovery O/E (%)
1	205.13	-	-
	607.82	655.13	92.8
	369.01	430.13	85.8
	291.93	317.63	91.9
2	236.10	-	-
	634.47	686.10	92.5
	431.52	461.10	93.6
	362.82	348.60	104.1

Linearity

Serum samples were serially diluted with Dilution Buffer and assayed.

Sample	Dilution	Observed (pg/ml)	Expected (pg/ml)	Recovery O/E (%)
1	-	388.62	-	-
	2x	197.00	194.31	101.4
	4x	111.80	97.16	115.1
	8x	55.59	48.58	114.4
2	-	444.87	-	-
	2x	236.07	222.44	106.1
	4x	126.01	111.22	113.3
	8x	60.60	55.61	109.0

Summary of protocol

- Reconstitute Master Standard and prepare set of Standards
- Dilute serum, cord blood serum samples (3x) and placental tissue extract (250x)
- Add 100 µl Standards and samples
- Incubate at RT for 1 hour/300 rpm
- Wash plate 3 times
- Add 100 µl Biotin Labelled Antibody
- Incubate at RT for 1 hour/300 rpm
- Wash plate 3 times
- Add 100 µl Streptavidin-HRP Conjugate
- Incubate at RT for 30 min/300 rpm
- Wash plate 3 times
- Add 100 µl Substrate Solution
- Incubate at RT for 10 min
- Add 100 µl stop solution
- Read absorbance and calculate results

Related products

- RD172254100 Placental Protein 13 (Galectin-13) Human *E. coli*
- RD193168200R Follistatin Human ELISA
- RD172168100 Follistatin Human *E. coli*
- RD184168100 Follistatin Human, Sheep Polyclonal Antibody

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