Preeklampsia

PLGF

(Human Placenta Growth Factor)

PLGF
Freies Estriol
HCG
Freies beta-HCG
AFP
PAPP-A
HPL

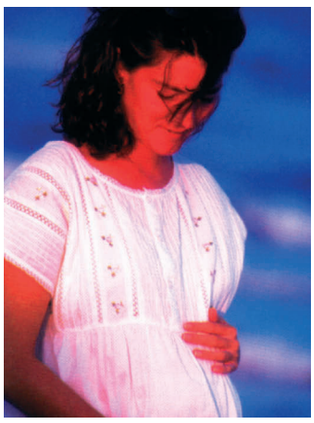
DRG

DRG ELISA

Schwangerschaftsüberwachung
Prenatal Monitoring

PLGF

Human Placenta Growth Factor



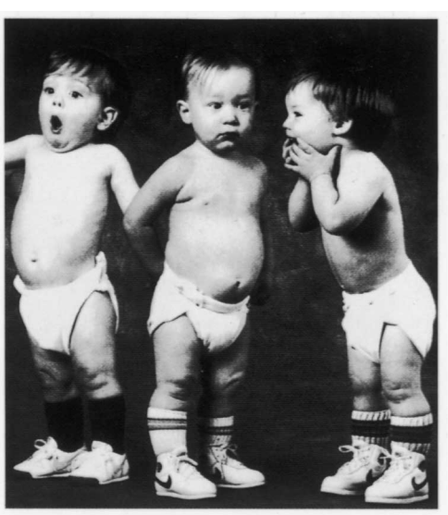
Der neue Marker für Präeklampsie

Bei 5-8 Prozent aller Schwangeren kommt es - meist im letzten Drittel der Schwangerschaft - zu einem Anstieg des Blutdrucks, zur Proteinausscheidung und zu Ödemen.
Dieser als Präeklampsie bezeichnete Zustand stellt eine Gefahr für Mutter und Kind dar und kann das Einleiten einer vorzeitigen Geburt erforderlich machen.

Studien über Präeklampsie haben gezeigt, dass wichtige Wachstumsfaktoren beeinflußt werden. Dies hat eine Mangelversorgung von Plazenta und Fötus zur Folge.

Heute kann man die Konzentration eines der betroffenen Wachstumsfaktoren, PLGF, im Blut bestimmen.

Der PLGF Elisa ermöglicht die frühzeitige Risikoerkennung einer Präeklampsie **(ab 15. SSW)** und ist somit ein wichtiges neues Werkzeug, um die Gesundheit von Mutter und Kind zu sichern.



A New Marker for Preeclampsia

In 5-8 percent of all pregnancies, Preeclampsia causes an increase in the mother's blood pressure, excretion of protein, and edemas – in the majority of cases, this occurs in the last trimester of pregnancy.

These clinical conditions, together termed Preeclampsia, are a risk for mother and child which can make it necessary to induce premature birth.

Studies about Preeclampsia have shown that important growth factors are affected. This causes malnutrition of placenta and fetus.

It is now possible to measure the concentration of one of the growth factors involved – PLGF – in blood.

*The PLGF ELISA allows the early detection (**15th week of pregnancy**) of the developmental risk factors of preeclampsia and is therefore an important new tool in the health protection of mother and child.*

PLGF Elisa EIA-4529

Inkubationszeit/*Incubation time:*	2,5 h
Standardbereich/*Standard range:*	0-1000 pg/mL
Probe/*Sample:*	25 µL Serum
Empfindlichkeit/*Sensitivity:*	1,06 pg/mL

Reagenzien sind gebrauchsfertig/*Ready to use reagents*
Kitinterne Kontrollen/*Internal kit controls*

Assay characteristics

CV Intra assay:	*1,68 % - 2,83 %*
CV Inter assay:	*4,10 % - 7,00 %*
Recovery:	*87,0 % - 105,5 %*
Linearity:	*88,1 % - 112,6 %*

Angiogenic factors in normal an preeclamptic pregnancies

Schmidt M[1], Hoffmann B[1], Callies R[1], Janetzko A[2], Kimmig R[1], Kasimir-Bauer S[1]

[1]Department of Gynecology and Obstetrics, University of Essen, Germany and [2]DRG Instruments GmbH, Marburg, Germany

Backround:

Angiogenesis and vascular transformation are important processes in the normal development of the placenta. Abnormal angiogenesis and vascular transformation are considered to be one of the main reasons for preeclamptic pregnancies and intrauterine growth retardation. Placental growth factor (PLGF), a member of the VEGF family, is produced chiefly by the placenta and is a potent angiogenic factor. The availability of a test to predict preeclampsia would be a powerful tool in preventing preeclampsia-induced risks for the mother and fetus. Now, a new PLGF-ELISA kit for routine diagnostics is available, which offers new possibilities in the prediction of preeclampsia.

Materials and methods:

Using solid phase enzyme-linked immunosorbent assay (ELISA) longitudinal serum concentrations of PLGF (DRG Instruments, Marburg, Germany) were measured in normal pregnancies. The values were compared to those of preeclamptic pregnancies.

Results:

The PLGF concentration in the normal pregnancies showed a steady increase with a peak at 28 to 32 weeks and a consistent decline thereafter. The preeclamptic pregnancies showed a significant lower serum concentration of PLGF compared to the non-preeclamptic pregnancies ($p < 0,05$). There was just a slight peak later in pregnancy.

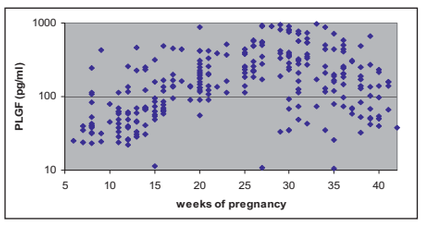


Figure 1: PLGF expression in normal pregnancies in the course of pregnancy

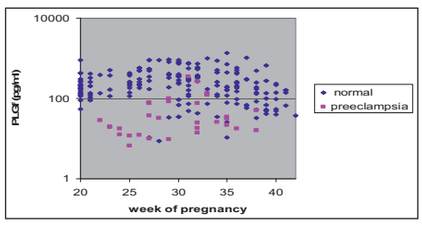


Figure 2: PLGF expression in normal and preeclamptic pregnancies (> 20 weeks)

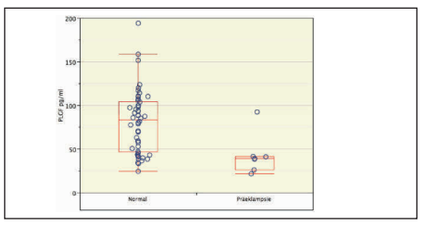


Figure 3: PLGF at 15 to 18 weeks
(Schmidt M et al, Gyn Geb Rundsch 2008, in press)

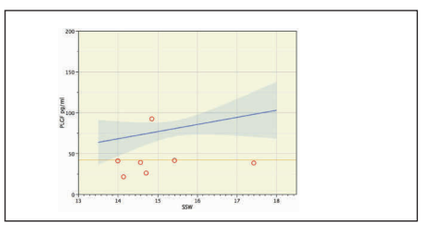


Figure 4: PLGF in preeclamptic pregnancies

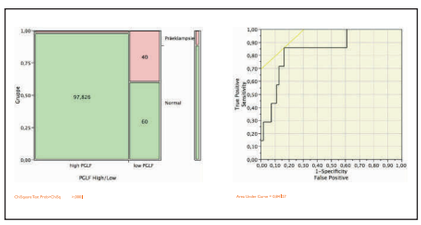
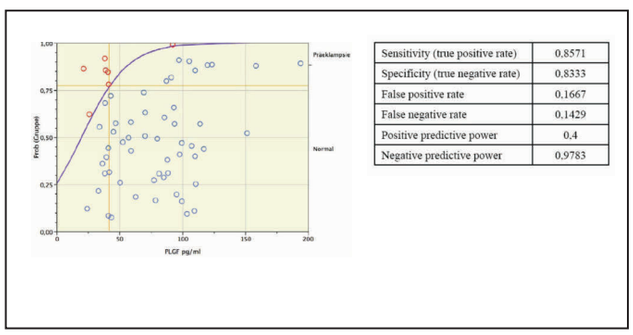


Figure 5: PLGF Cutoff 41,84 pg/mL
Relative risk: 18,4 (95 % CI: 2,40-140,83)
Odds ratio: 30 (95 % CI: 3,21-280,31)



Sensitivity (true positive rate)	0,8571
Specificity (true negative rate)	0,8333
False positive rate	0,1667
False negative rate	0,1429
Positive predictive power	0,4
Negative predictive power	0,9783

Figure 6: PLGF and probability of preeclampsia

DRG PLGF-ELISA

- All the measured assay characteristics fullfilled the required specifications
- The assay can be considered reliable
- Comfortable using
  - Kit supplies „ready to use reagents"
  - Short incubation period (2.5h)
  - Attractive price

Results

- PLGF expression showed a steady increase beginning at 15 weeks
- PLGF expression is significantly lower in preeclamptic pregnancies
- Aspirin (ASS) has a protective effect starting < 18 weeks

PLGF as a useful marker?

Yes: PLGF expression in early pregnancy is lower in pregnancies with developing preeclampsia

- Helps to indentify high risk patients:
- 15-18 weeks: < 42 pg/mL
- Aspirin therapy in early stage of pregnancy could be a strategy to reduce the risk of preeclampsia

Labordiagnostik für die Gynäkologie
Gynecologic Endocrinology

ELISAS Hormones
Androstendione
Estradiol
Estrone
DHEA
DHEA-S
Progesterone
17 alpha-OH Progesterone
SHBG
Testosterone
Dihydrotestosterone (DHT)
Free Testosterone
Prolactin, FSH, LH

ELISAS Tumor Marker
CA 125
CA 15-3
CA 19.9
CEA
TPA
TPS
CA 72-4
SCC
S100
Cyfra 21-1
Chromogranin A
Afamin
L1-CAM
beta-HCG
PSA/Free PSA
Crypto-1
NSE
UBC
AFP

ELISAS Prenatal Monitoring
PLGF
Free Estriol
HCG
Free beta-HCG
AFP
PAPP-A
HPL

CE

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DRG Diagnostics

DRG Instruments GmbH, mit Sitz in Marburg, wurde im Jahre 1973 als Niederlassung von DRG International, Inc. USA gegründet.
Heute widmet sich die Firma hauptsächlich der Entwicklung, Produktion und dem weltweiten Vertrieb von neuen und innovativen ELISA Testsystemen.
Die DRG ist nach ISO 9001 und ISO 13485 zertifiziert.

ELISAS that perform

DRG entwickelt, produziert und vertreibt diagnostische ELISA Testkits für den Gebrauch in Klinik und Forschung.
Die Erfahrung unseres Produktions- und Managementteams garantiert hochqualitative Produkte mit einem guten Preis-Leistungs-Verhältnis und einem exzellenten Kundenservice.
DRG Kits bieten beste Qualität, hervorragende Performance und Reproduzierbarkeit sowie einfache Handhabung: Mikrotiterstrips einzeln brechbar, gebrauchsfertige Reagenzien, kurze Inkubationszeiten und lange Haltbarkeit.
Unsere ELISA Kits sind erhältlich in verschiedenen Formaten und damit anpassungsfähig an die Bedürfnisse des Kunden und der Märkte.

DRG Diagnostics

DRG Instruments GmbH, founded in 1973 by Dr. Geacintov, subsidiary of DRG Intl. Inc., USA, is a diagnostics manufacturer of ELISAS.
The DRG Group operates through a network of DRG subsidiaries in Germany, Poland, Russia and the Czech Republic and through distributors worldwide.

ELISAS that perform

DRG develops and manufactures diagnostic ELISA test kits for use in clinical and research laboratories.
The experience of our production and management team guarantees to provide high quality products, competitive prices and excellent customer service.

DRG works to DIN EN ISO 9001:2008, ISO 13485:2007 and ISO 13485:2003 under CMDCAS standard, certified by TÜV Rheinland Product Safety GmbH, an indication of our commitment to customer service, quality control and improved health care.

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