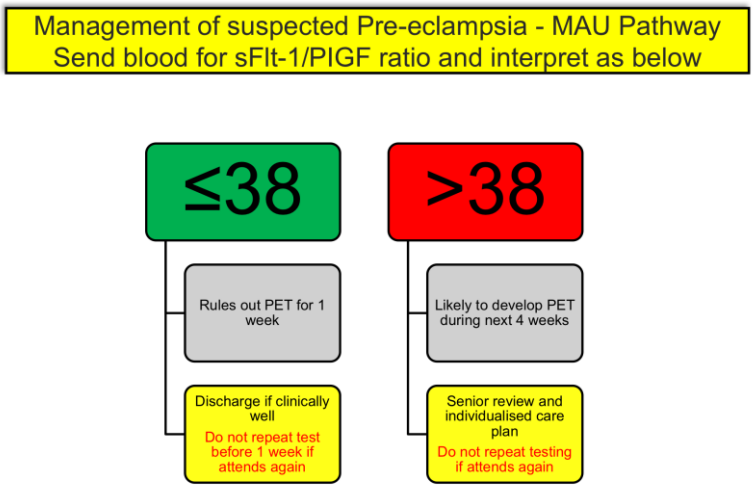
Placental Growth Factor	
Test Name (Analyte)	Placental Growth Factor
Alternative Name(s) and Keywords	PLGF, sFlt-1/PLGF ratio
Discipline/Specialty	Biochemistry
Description	Biomarker to help diagnose suspected preterm pre-eclampsia in conjunction with sFlt-1.
Clinical Indication	Suspicion of preeclampsia in pregnant women. Pre-eclampsia is characterised by high blood pressure (hypertension) and proteinuria, which is when the kidneys leak protein into the urine. Either, on its own indicates a risk of developing pre-eclampsia. Other symptoms include headache, visual disturbances, right upper quadrant abdominal (epigastric) pain, oedema (swelling of the hands, face or feet) and oliguria (low urine output). PLGF will help decide on care (to help rule in or rule out pre-eclampsia) for people with suspected preterm (between 20 weeks and 36 weeks and 6 days of pregnancy). PLGF-based testing may particularly benefit groups at higher risk of severe adverse pregnancy outcomes, such as people from African, Caribbean and Asian family backgrounds.
Patient Preparation	Samples should not be taken from patients receiving therapy with high biotin doses (> 5mg/day) until at least 8 hours following the last biotin administration.
Specimen Container	Serum (red cap) or Serum gel (gold cap)
Container Image	Use image already in lab handbook
Primary Sample Type	Blood
Minimum Volume Required (µL for serum//blood/urine etc. unless otherwise stated)	5 mL
Special Precautions / Requirements	N/A
Transport and Storage Requirements	Transport to laboratory via porter or POD system at room temperature
Reference Interval(s)	≤38, rule out pre-eclampsia for 1 week (week 24 to week 36 plus 6 days) >38, rule in pre-eclampsia within 4 weeks (week 24 to week 36 plus 6 days)
Telephone Action Limit(s)	N/A

Measurement Units	ng/L
Clinical Interpretation	It defines pre-eclampsia as new-onset hypertension (over 140 mmHg systolic or over 90 mmHg diastolic) after 20 weeks of pregnancy plus 1 or more new-onset conditions. If a woman presents with some but not all of these criteria, they are considered to have suspected pre-eclampsia. If they are under 37 weeks of pregnancy, this would be suspected preterm pre-eclampsia.

Recommended cut-offs for the Elecsys immunoassay sFlt-1/PLGF ratio

Intended use	Stage of pregnancy	Decision rule	sFlt-1/PLGF ratio
To help diagnose pre-eclampsia	Week 20 to week 33 plus 6 days	Rule out cut-off	33
To help diagnose pre-eclampsia	Week 20 to week 33 plus 6 days	Rule in cut-off	85
To help diagnose pre-eclampsia	Week 34 to birth	Rule out cut-off	33
To help diagnose pre-eclampsia	Week 34 to birth	Rule in cut-off	110
Short-term	Week 24 to week	Rule out pre-	≤38

	<table><tr><td>prediction of pre-eclampsia</td><td>36 plus 6 days</td><td>eclampsia for 1 week</td><td></td></tr><tr><td>Short-term prediction of pre-eclampsia</td><td>Week 24 to week 36 plus 6 days</td><td>Rule in pre-eclampsia within 4 weeks</td><td>>38</td></tr></table> In normal pregnancy, the pro-angiogenic factor PLGF increases during the first two trimesters and decreases as pregnancy progresses to term. Low levels of PLGF in pregnancy may be an indication of placental disease. 
Useful Links / Guidelines	NICE DG49 https://www.nice.org.uk/guidance/dg49
Common Interferences / Causes of Spurious Results	Icterus, haemolysis and lipaemic samples may cause negative interference over a certain threshold. High dose biotin intake/supplementation may cause erroneous results. Therapeutic doses of N-acetylcysteine may cause falsely lower PLGF results.
Availability of Clinical Advice	Please discuss with duty biochemist
Significant Change Values	N/A

Testing Frequency / Minimum Re-testing Interval	Use a PLGF-based test once per episode of suspected preterm pre-eclampsia.
Related tests	SFlt-1 and sFlt-1/PLGF ratio
Technology & Analytical Principle Used	Roche Elecsys immunoassay PLGF (sFlt-1/PLGF ratio)
EQA Scheme	NEQAS Edinburgh, UK NEQAS for Preeclampsia Markers.
Laboratory Performed	RLH (CSSB)
UKAS Accreditation Status	LCL

Form completed by: Ceri Rowe Date: 07/09/2022

Change control completed by: Date:
(QMS-EXTD-160, LCL Laboratory Handbook)