

Soluble Fms-Like Tyrosine Kinase-1

Test Name (Analyte)	Soluble Fms-Like Tyrosine Kinase-1
Alternative Name(s) and Keywords	sFlt-1, sFlt-1/PLGF ratio, VEGF receptor-1
Discipline/Specialty	Biochemistry
Description	Biomarker to help diagnose suspected preterm pre-eclampsia in conjunction with PLGF
Clinical Indication	<p>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).</p> <p>sFlt-1 with 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.</p>
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	5 mL
(μ L for serum//blood/urine etc. unless otherwise stated)	
Special Precautions / Requirements	N/A
Transport and Storage Requirements	Transport to laboratory via porter or POD system at room temperature
Reference Interval(s)	<p>\leq38, rule out pre-eclampsia for 1 week (week 24 to week 36 plus 6 days)</p> <p>>38, rule in pre-eclampsia within 4 weeks (week 24 to week 36 plus 6 days)</p>

Telephone Action Limit(s)	N/A																				
Measurement Units	ng/L																				
Clinical Interpretation	<p>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.</p> <p>Recommended cut-offs for the Elecsys immunoassay sFlt-1/PLGF ratio</p> <table border="1"> <thead> <tr> <th>Intended use</th> <th>Stage of pregnancy</th> <th>Decision rule</th> <th>sFlt-1/PLGF ratio</th> </tr> </thead> <tbody> <tr> <td>To help diagnose pre-eclampsia</td> <td>Week 20 to week 33 plus 6 days</td> <td>Rule out cut-off</td> <td>33</td> </tr> <tr> <td>To help diagnose pre-eclampsia</td> <td>Week 20 to week 33 plus 6 days</td> <td>Rule in cut-off</td> <td>85</td> </tr> <tr> <td>To help diagnose pre-eclampsia</td> <td>Week 34 to birth</td> <td>Rule out cut-off</td> <td>33</td> </tr> <tr> <td>To help diagnose pre-eclampsia</td> <td>Week 34 to birth</td> <td>Rule in cut-off</td> <td>110</td> </tr> </tbody> </table>	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
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	<p>Short-term prediction of pre-eclampsia</p>	<p>Week 24 to week 36 plus 6 days</p>	<p>Rule out pre-eclampsia for 1 week</p>	<p>≤38</p>
	<p>Short-term prediction of pre-eclampsia</p>	<p>Week 24 to week 36 plus 6 days</p>	<p>Rule in pre-eclampsia within 4 weeks</p>	<p>>38</p>
	<p>Levels of the anti-angiogenic factor sFlt-1 remain stable during the early and middle stages of gestation and increase steadily until term.</p> <div style="border: 1px solid black; background-color: yellow; padding: 5px; text-align: center; margin: 10px 0;"> <p>Management of suspected Pre-eclampsia - MAU Pathway Send blood for sFlt-1/PIGF ratio and interpret as below</p> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="background-color: green; color: white; padding: 10px; border-radius: 10px; font-size: 24px; font-weight: bold;">≤38</div> <div style="border: 1px solid gray; padding: 5px; margin: 5px; font-size: 10px;">Rules out PET for 1 week</div> <div style="border: 1px solid gray; padding: 5px; margin: 5px; font-size: 8px;"> <p>Discharge if clinically well</p> <p style="color: red;">Do not repeat test before 1 week if attends again</p> </div> </div> <div style="text-align: center;"> <div style="background-color: red; color: white; padding: 10px; border-radius: 10px; font-size: 24px; font-weight: bold;">>38</div> <div style="border: 1px solid gray; padding: 5px; margin: 5px; font-size: 10px;">Likely to develop PET during next 4 weeks</div> <div style="border: 1px solid gray; padding: 5px; margin: 5px; font-size: 8px;"> <p>Senior review and individualised care plan</p> <p style="color: red;">Do not repeat testing if attends again</p> </div> </div> </div>			
<p>Useful Links / Guidelines</p>	<p>NICE DG49 https://www.nice.org.uk/guidance/dg49</p>			
<p>Common Interferences / Causes of Spurious Results</p>	<p>Icterus, haemolysis and lipaemic samples may cause negative interference over a certain threshold. High dose biotin intake/supplementation may cause erroneous results.</p>			
<p>Availability of Clinical Advice</p>	<p>Please discuss with duty biochemist</p>			
<p>Significant Change Values</p>	<p>N/A</p>			

Testing Frequency / Minimum Re-testing Interval	Use a PLGF-based test once per episode of suspected preterm pre-eclampsia which includes sFlt-1/PLGF ratio.
Related tests	PLGF and sFlt-1/PLGF ratio
Technology & Analytical Principle Used	Roche Elecsys immunoassay sFlt-1 (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:
(QMS-EXTD-160, LCL Laboratory Handbook)

Date: