PLGF; sFlt; sFlt:PLGF ratio

Pseudonyms: Placental growth factor; soluble FMS like tyrosine kinase-1

The sFlt:PLGF ratio is measured in pregnancy only. These two circulating placentally- derived biomarkers, soluble FMS like Tyrosine kinase 1 (sFlt) and Placental Growth Factor (PLGF), are detectable in the blood of pregnant women and the levels of these markers are altered in pre-eclampsia. The sFlt-1/PLGF ratio, used with standard clinical assessment and subsequent clinical follow-up, is recommended to help rule-out pre-eclampsia in women presenting with suspected pre-eclampsia between 20 weeks and 34 weeks plus 6 days of gestation [NICE DG23].

Pre-eclampsia complicates around 3% of pregnancies and is associated with significant maternal and neonatal morbidity and mortality. Approximately 30% of cases of pre-eclampsia require a preterm delivery to prevent severe maternal complications.

Assessment of suspected pre-eclampsia includes clinical assessment of maternal hypertension, proteinuria, clinical symptoms such as headache, oedema, visual disturbances, foetal growth restriction and measurement of sFlt:PLGF ratio. A high sFlt:PLGF ratio is seen in pre-eclampsia.

General information

Collection container: Serum (with gel separator, 4.9mL brown top Sarstedt tube)

Type and volume of sample: The tubes should be thoroughly mixed before transport to the lab. 1mL whole blood is required as a minimum volume if only sFlt:PLGF ratio is requested.

If referred in from external hospital minimum volume is 0.5ml serum. Samples should be analysed within 48hrs if stored at 2-8˚C, stable for up to 6 months stored at -20°C.

Specimen transport/special precautions: Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.

Apex Test code: PLGFP for ratio (tests not requestable individually)

Laboratory information

Method principle: PLGF and sFlt are analysed on the automated instruments by competitive immunoassay with electrochemiluminescence detection.

Biological reference ranges: PLGF and sFlt both measured in pg/mL, ratio no units

Ratio is not reported with reference range as interpretation is based on clinical pathway including clinical maternal and foetal assessment in conjunction with sFlt:PLGF ratio result, not as an isolated finding.

Turnaround times: Results should be available the same working day.

A request can be added on for this test to a sample collected no older than 48hrs.

Clinical information

Factors known to significantly affect the results: None

Clinical decision points: sFlt:PLGF ratio is used in suspected pre-eclampsia not confirmed by clinical assessment <37 weeks. Clinical pathway includes clinical assessment of maternal symptoms, bp, proteinuria, other markers and foetal assessment in conjunction with sFlt:PLGF ratio:

sFlt:PLGF ratio <38	pre-eclampsia excluded for next 7 days
sFlt:PLGF ratio ≥38 to <85	Intermediate result, increased surveillance
sFlt:PLGF ratio ≥85	diagnosis of pre-eclampsia/placental disease confirmed

Note a positive ratio is not an isolated indication for delivery <37 weeks.

(Last updated February 2021)