Phenobarbital

Description	Phenobarbital is a widely used anticonvulsant.
Indication	Assessing compliance, toxicity and drug interactions
Additional Info	This analysis is not performed by RLBUHT Blood Sciences Laboratory but is sent to a reference laboratory for analysis.
Concurrent Tests	N/A
Dietary Requirements	N/A
Interpretation	Most people taking phenobarbital will respond to the drug without symptoms of toxicity, whilst levels are in the therapeutic range. Renal or hepatic disease may result in increased phenobarbital concentrations due to decreased clearance (renal) or decreased metabolism (hepatic). Toxicity due to phenobarbital overdose is characterized by CNS sedation and reduced respiratory function. Mild symptoms can include ataxia, nystagmus, fatigue, or attention loss. There are no known drug interactions that significantly affect the pharmacokinetics of phenobarbital; conversely, phenobarbital affects the pharmacokinetics of other drugs significantly because it induces the synthesis of enzymes associated with the hepatic cytochrome P450 metabolic pathway. Acute intermittent porphyria attacks may be induced by phenobarbital stimulation of hepatic cytochrome P450.
Collection Conditions	For monitoring purposes, blood should not be drawn until a steady state has been reached. This is approximately 2-4 weeks after starting therapy or changing dose (in children this is shorter). Long half-life of 80-120 hours so no pre/post dose timing requirements necessary. Plain serum sample (Sarstedt white top).
Frequency of testing	Measurement is generally only indicated: • When first starting phenobarbital therapy (once at steady state). • If other regular medications change which can influence the pharmacokinetics of phenobarbital. • If persistent side effects are experienced.