Digoxin

UKAS MEDICAL 7880 Accredited to ISO 15189:2012

Synonyms	Lanoxin
Clinical Indication	Digoxin is a cardiac glycoside used in the treatment of congestive heart failure and some types of cardiac arrhythmias. Given the relatively narrow therapeutic window of digoxin, with substantial overlap between so-called therapeutic and toxic levels, patients taking digoxin require monitoring of the serum digoxin concentration, with the "optimal" level varying with the clinical setting. Monitoring the serum digoxin level is particularly important in persons with chronic renal dysfunction or rapidly changing renal function, as significantly decreased renal function can lead to accumulation of digoxin and its metabolites and predispose to digoxin toxicity. Additionally, patients with electrolyte disturbances, particularly hypokalaemia and hypomagnesemia, which may be related to diuretic therapy or other medications, are at increased risk for digoxin-associated arrhythmias and should undergo monitoring of the serum digoxin level until serum potassium level and magnesium concentration return to the normal range. Toxicity symptoms include nausea, vomiting, visual disturbances (especially colour vision) bradycardia, sweating, convulsions and coma. An information sheet is available from National Poisons Service (Toxbase).
Part of Profile / See Also	
Request Form	Combined Pathology manual Blood form or ICE request. Please state time after last dose on request form.
Availability / Frequency of Analysis	On request during routine hours. Laboratory must be contacted regarding urgent requests.
Turnaround Time	Same day.
Patient Preparation	Blood samples must be obtained at least 6 hours, but optimally 12 hours, after administration of digoxin to ensure completion of distribution from the blood to the tissues. In patients with advanced kidney disease or who are on haemodialysis, the digoxin level should be checked at least 12 to 24 hours after the prior dose. Serum digoxin concentrations measured prior to these times may be falsely elevated.
Sample Requirements	
Specimen Type	Serum
Volume	2 ml
Acceptable Containers	 Yellow top (SST) tube Plain serum samples may also be used
Reference Range & Units	0.8 - 2.0 µg/L. Target range in heart failure is 0.5 - 1.0 µg/L Reference: Pathology Harmony Group, Clinical Biochemistry Outcomes, January 2011 (www.pathologyharmony.co.uk)

	Half Life 36-48 hours
Interferences	Digoxin Immune Fab (such as digibind), an antidote for digoxin overdose will interfere with the digoxin assay until the Fab fragment is cleared from the body. Serum digoxin concentration should be determined before administration where possible.
Interpretation & Clinical Decision Value (if applicable)	A wide range of factors alter clinical response, most importantly hypokalaemia which is associated with enhanced response and may produce digoxin toxicity within the target ranges. Hypercalcaemia, hypomagnesaemia and hypothyroidism are also associated with increased tissue sensitivity.
References	Beckman kit insert
Test code	DIG
Lab Handling	Analysed from primary tube and stored at 4°C Serum stable for 90 days at 2-8°C. Serum stable for 2 weeks at 15-25°C.