Who we are

Majority owned by the NHS, but with the commercial freedom to invest in innovation, Viapath are on a mission to transform pathology services in the UK. We provide pathology services to the NHS, private hospitals and other organisations both across the country and internationally.

What we do

All of our laboratories are CPA accredited and are working towards the more stringent ISO15189 accreditation. We are committed to delivering a clinically excellent pathology service, placing quality at the core of everything we do.

TEST OVERVIEW

Description

Lupus anticoagulants (LA) are classified as antiphospholipid antibodies (APA), although they are in fact directed against phospholipid-binding proteins, in particular, β2 glycoprotein I and prothrombin. The presence of persistent LA has a greater association with thrombosis, pregnancy morbidity and recurrence than the criteria antibodies detected in solid-phase assays (aCL & aβ2GPI). LA are a heterogeneous group of autoantibodies that are detected by inference based on their behaviour in phospholipid-dependent coagulation assays after other possible causes of elevated clotting times have been excluded. LA detection involves use of screening, confirmatory and mixing tests. Screening tests commonly employ dilute phospholipid to accentuate the in vitro anticoagulant effect of LA, which if present, will prolong the clotting time. Screening tests can be prolonged for reasons other than LA, (i.e. factor deficiencies, anticoagulant therapy), so all elevated screening tests receive follow-up analyses to help define the nature of any abnormality. The confirm test generally involves performing the screening test in an identical fashion except that the phospholipid concentration is markedly increased. This has the effect of partially or completely overwhelming the LA and thus leads to a shorter clotting time than the screening test, thereby evidencing phospholipid dependence. Clotting times are converted to ratios to mitigate for issues of analytical variability. Correction of the screen ratio by the confirm ratio by ≥10% is considered consistent with the presence of a LA, providing that other causes of elevated clotting times are excluded. Diagnostic specificity is improved by performing the screen and confirmatory tests on 1:1 mixtures of test and normal plasma to evidence inhibition and reduce interferences, although the inevitable dilution effect can compromise this aspect of analysis. Antibody heterogeneity and reagent variability necessitate use of at least two assays, of different analytical principle, to achieve acceptable detection rates. First-line assays are dilute Russell’s viper venom time (dRVVT) and LA-responsive APTT, a pairing that will detect most clinically significant antibodies. A limitation common to both dRVVT & dAPTT analysis is that they are both compromised by the VKA anticoagulant effect and results are not always reliable. The prothrombin activator present in the venom of the Coastal Taipan (Oxyuranus scutellatus) can activate the des-carboxyprothrombin generated on VKA anticoagulation to the intermediate, meizothrombin, and facilitate in vitro clot formation. The prothrombin activator requires phospholipid and calcium ions as co-factors, so dilution of a suitable phospholipid preparation renders the Taipan snake venom time (TSVT)

Related condition or disease

Antiphospholipid syndrome, acquired thrombophilia

Reference range

TSVT 0.87 – 1.14 ET 0.88 – 1.14

Units

Ratio

Department

Haemostasis and Thrombosis Department

Laboratory

Diagnostic Haemostasis and Thrombosis Laboratory at St Thomas’

Location

Viapath at St Thomas’ Hospital
assay LA-responsive, yet it gives normal clotting times in VKA anticoagulated patients without LA. The ecarin time (ET) is used in place of a high-phospholipid confirmatory test. The ecarin fraction is obtained from the venom of the saw-scaled viper (Echis carinatus) and is a direct prothrombin activator with no co-factor requirements, so an assay without phospholipid is totally insensitive to LA. Ecarin is also insensitive to the VKA anticoagulant effect. As both venoms are prothrombin activators, they are completely unaffected by inhibitors of FXa.

**Clinical details**
The antiphospholipid syndrome (APS) is a systemic autoimmune disorder characterised clinically by vascular thrombosis and/or pregnancy morbidity. APS is diagnosed in patients who present with these clinical signs and symptoms and demonstrate the persistent presence of antiphospholipid antibodies. Criteria antibodies for diagnosis of APS are lupus anticoagulant, anticardiolipin antibodies and/or β2 glycoprotein I antibodies. Persistence of one or more of these antibodies in the presence of appropriate clinical manifestations secures diagnosis of APS, although association and recurrence are higher in patients with multiple-positivity.

**ORDERING INFORMATION**

**Sample type and Volume required**
Citrate (x2)

**Turnaround time**
7 - 12 days

**Contacts**
Diagnostic Haemostasis and Thrombosis Department
020 7188 2797
St Thomas' Hospital
North Wing - 4th and 5th Floors
Westminster Bridge Road
London SE1 7EH

Laboratory opening times
24/7

How can we help?
We have a number of partnering options to suit your needs, whether you require this specific test or a range of services, we are here to help. Contact one of our friendly Business Development Managers for more information, or visit our website.