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TECHNICAL BULLETIN

Pathologists and Consultants

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NEW TEST ANNOUNCEMENT

Lupus Anticoagulant Panel

*By David Coon, M.D., Ph.D. and
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Antiphospholipid antibodies are circulating antibodies directed against anionic phospholipids. It is estimated that approximately 1-2% of the general population have circulating antiphospholipid antibodies and the prevalence increases with age and coexisting chronic disease. In some people, these antibodies are an important risk factor that predisposes them to venous or arterial thrombosis. The two principal groups of antiphospholipid antibodies are lupus anticoagulants (LAs) and anticardiolipin antibodies (aCLs). The presence of these antibodies in a patient with arterial or venous thrombosis or recurrent pregnancy loss constitutes the antiphospholipid antibody syndrome.

Lupus anticoagulants can be detected by a prolongation of special phospholipid-dependent coagulation tests. The lupus panel uses a combination of screening and confirmatory assays to detect the presence of a lupus anticoagulant. The panel initially screens patients for a lupus anticoagulant by using a PTT-LA assay. For specimens with a positive PTT-LA result, the possibility of a factor deficiency must be ruled out. These specimens are mixed with normal plasma in a 1:1 ratio and re-tested with the PTT-LA assay. A correction of the prolonged result to normal suggests a factor deficiency and no further testing for a lupus anticoagulant is indicated. A continued prolonged result on the 1:1 mixed specimen indicates a lupus anticoagulant may be present. The specimen is then tested with the hexagonal phase phospholipid assay. Reagents used in this assay have a strong affinity for the lupus anticoagulant. A positive result with hexagonal phase testing confirms the presence of a lupus anticoagulant and no further testing is required.

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If the hexagonal phase assay is negative or equivocal, the patient's plasma is then tested with the dilute Russell's Viper Venom Time Test (dRVVT). Normal dRVVT results with the screening assay indicate an LA is not detected and no further testing is required. Specimens with positive results require confirmation with the dRVVT confirmatory assay. Negative results with the confirmatory assay suggest an LA is not detected and no further testing is required. Positive results are consistent with the presence of an LA.

Note that no single test can guarantee with certainty that LA is present in a given sample, necessitating confirmatory assays to establish diagnoses. Furthermore, this panel does not detect the presence of anticardiolipin antibodies. Additional testing for anticardiolipins should be considered for patients with a strong clinical suspicion of an antiphospholipid antibody.

The diagnosis of antiphospholipid antibody syndrome requires arterial or venous thrombosis or recurrent fetal loss in the setting of a positive antiphospholipid antibody. The antiphospholipid antibody must be present in the plasma on two or more occasions at least 12 weeks apart. (Miyakis, S. *et al.* International consensus statement on an update of the classification criteria for definite antiphospholipid syndrome (APS), *J. Throm. Haem.*, 2005, 4, 295-306.)

Since the assays are based on the PTT, false positive results can result from patients on anticoagulants that prolong the PTT including heparin, hirudin and argatroban. Results can be correctly interpreted in the presence of coumadin.

The Hexagonal Phase, DRVVT and cardiolipin assays are not affected by up to 1 IU/mL of heparin, so patients undergoing heparin therapy may be tested for the lupus anticoagulant by these methods.

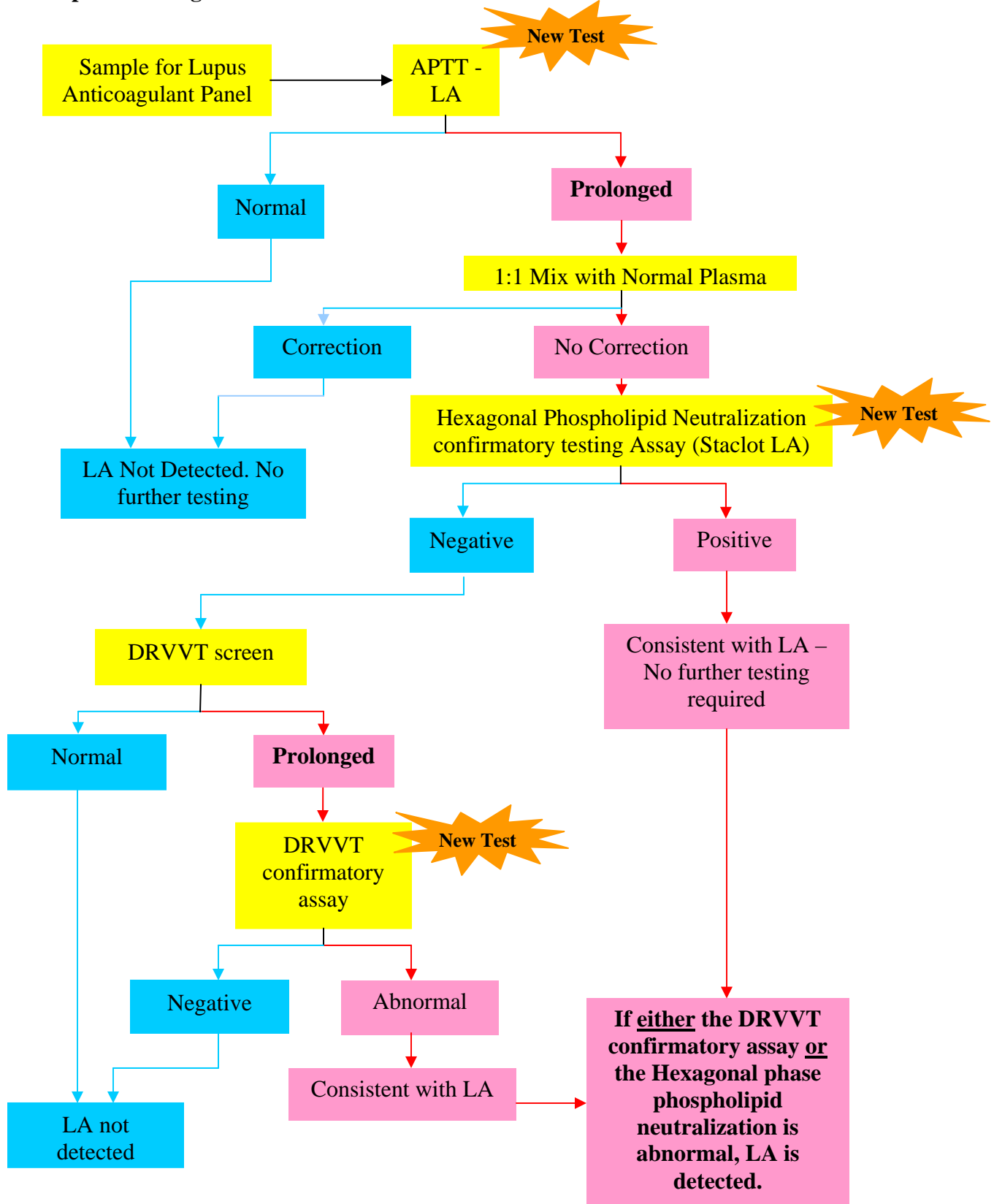
See Technical Bulletins of Related Tests:

Dilute Russell's Viper Venom Test
dRVVT Confirmatory Test
Hexagonal Phase
Anticardiolipin Antibodies

Please see last page for further information or contact any of our client services representatives:

Oahu	677-7998
Hawaii	961-5812
Kona	322-4126
Kauai	245-7775
Maui	244-5567

Lupus Anticoagulant Flow Chart



NEW TEST INFORMATION

Lupus Anticoagulant Panel

<i>Specimen Requirements</i>	<i>1.0 mL platelet poor citrate (light blue topped tube) plasma (0.5 mL minimum). Centrifuge and separate plasma, then centrifuge plasma a second time. Remove plasma, staying clear of the bottom of the tube where the platelets lie. Transfer plasma to a polypropylene tube and freeze immediately. Ship frozen.</i>
<i>Unacceptable Specimen</i>	<i>Patient taking heparin, hirudin and/or argatroban</i>
<i>Specimen Stability</i>	<i>Ambient: unacceptable (not stable) Refrigerated: 4 hours Frozen (-20°C): 1 week</i>
<i>Effective Date</i>	<i>March 12, 2007</i>
<i>Testing Site</i>	<i>Hawaii Medical Center – West Core Laboratory</i>
<i>Reference Range</i>	<i>Not Detected</i>
<i>Testing Schedule</i>	<i>Two times per week</i>

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