

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB: 3/6/1967
Gender: Female
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
Collection Date: 00/00/0000 00:00

Thrombotic Risk Reflexive Panel

ARUP test code 2006385

Homocysteine, Total	7 umol/L	(Ref Interval: <=10)
	INTERPRETIVE INFORMATION: Homocysteine, Total	
	Elevated total homocysteine (tHcy) concentrations may be associated with vitamin B12 deficiency, folate deficiency, or inherited disorders of methionine metabolism. tHcy may also be used as a weak-graded risk factor for cardiovascular disease or stroke.	
Protein C Functional	142 %	(Ref Interval: 83-168)
	INTERPRETIVE INFORMATION: Protein C, Functional	
	Patients on warfarin may have decreased protein C values. Patients should be off warfarin therapy for two weeks for accurate measurement of protein C levels. Artificially increased functional protein C values may be due to heparin therapy or the presence of direct thrombin inhibitors or factor Xa inhibitors.	
	Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).	
Protein S Ag Free	97 %	(Ref Interval: 55-123)
	INTERPRETIVE INFORMATION: Protein S Ag, FREE	
	Patients on warfarin may have decreased free protein S values. Patients should be off warfarin therapy for two weeks for accurate measurement of free protein S levels. Decreased levels of free protein S are also associated with DIC, liver disease, pregnancy, and inflammatory syndromes.	
	Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).	
Antithrombin, Enzymatic (Activity)	108 %	(Ref Interval: 76-128)
	REFERENCE INTERVAL: Antithrombin, Enzymatic (Activity)	
	Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).	
APC Resistance	3.52	(Ref Interval: >=2.00)

H=High, L=Low, *=Abnormal, C=Critical

TEST INTERPRETATION: APC Resistance Profile

Ratios less than 2.00 suggest APC resistance. This method uses factor V deficient plasma; therefore, APC resistance due to a nonfactor V mutation will not be detected. Extreme factor V deficiency may cause abnormal ratio.

Prothrombin Time	12.8 sec	(Ref Interval: 12.0-15.5)
dRVVT Screen	44 sec	(Ref Interval: 33-44)
dRVVT 1:1 Mix	Not Applicable sec	(Ref Interval: 33-44)
dRVVT Confirmation	Not Applicable ratio	(Ref Interval: Negative)
PTT-LA Screen (PTT-D)	44 sec	(Ref Interval: 32-48)
Thrombin Time	Not Applicable sec	(Ref Interval: 14.7-19.5)
Reptilase Time	Not Applicable sec	(Ref Interval: <=21.9)
PTT-D Heparin Neutralized	Not Applicable sec	(Ref Interval: 32-48)
PTT-D 1:1 Mix	Not Applicable sec	(Ref Interval: 32-48)
Platelet Neutralization (PTT-D, Confirm)	Not Applicable	(Ref Interval: Negative)
Hexagonal Phospholipid Neutral Reflex	Not Applicable	(Ref Interval: Negative)
Lupus Anticoagulant Interpretation	See Note	

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Tracy I. George, MD, Laboratory Director

Patient: Patient, Example
ARUP Accession: 19-324-401535
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
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Lupus anticoagulant not detected.
The phospholipid-dependent screening tests (PTT, DRVVT) are not prolonged.

Lupus anticoagulant antibodies are heterogeneous and antibody titers fluctuate over time. Laboratory tests used to identify lupus anticoagulants demonstrate variable sensitivity. If there is strong clinical suspicion for antiphospholipid antibody syndrome (APS), consider testing for cardiolipin and beta-2 glycoprotein 1 antibodies (IgG and IgM) if this testing has not already been performed.

Thrombosis Interpretation - Risk

See Note

No thrombotic risk factor is identified.

B2Glycoprotein 1, IgG Antibody

0 SGU

(Ref Interval: 0-20)

B2Glycoprotein 1, IgM Antibody

9 SMU

(Ref Interval: 0-20)

INTERPRETIVE INFORMATION: B2Glycoprotein I, IgG and IgM Antibody

The persistent presence of IgG and/or IgM beta 2 glycoprotein I (B2GPI) antibodies (greater than 99th percentile) is a laboratory criterion for the diagnosis of antiphospholipid syndrome (APS). Persistence is defined as moderate or high levels of IgG and/or IgM B2GPI antibodies detected in two or more specimens drawn at least 12 weeks apart (J Throm Haemost. 2006;4:295-306). B2GPI results greater than 20 SGU (IgG) and/or SMU (IgM) are considered positive based on the cutoff values established for this test. International reference materials and consensus units for anti-B2GPI antibodies have not been established (Clin Chim Acta. 2012;413(1-2):358-60; Arthritis Rheum. 2012;64(1):1-10.). Strong clinical correlation is recommended for a diagnosis of APS. Low positive IgG and IgM B2GPI antibody levels should be interpreted in light of APS-specific clinical manifestations and/or other criteria phospholipid antibody tests.

Cardiolipin Antibody IgG

1 GPL

(Ref Interval: 0-14)

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INTERPRETIVE INFORMATION: Anti-Cardiolipin IgG Ab

0-14 GPL: Negative
15-19 GPL: Indeterminate
20-80 GPL: Low to Moderately Positive
81 GPL or above: High Positive

The persistent presence of IgG and/or IgM cardiolipin (CL) antibodies in moderate or high levels (greater than 40 GPL and/or greater than 40 MPL units or greater than 99th percentile) is a laboratory criterion for the diagnosis of antiphospholipid syndrome (APS). Persistence is defined as moderate or high levels of IgG and/or IgM CL antibodies detected in two or more specimens drawn at least 12 weeks apart (J Throm Haemost. 2006;4:295-306). Lower positive levels of IgG and/or IgM CL antibodies (above cutoff but less than 40 GPL and/or less than 40 MPL units) may occur in patients with the clinical symptoms of APS; therefore, the actual significance of these levels is undefined. Results should not be used alone for diagnosis and must be interpreted in light of APS-specific clinical manifestations and/or other criteria phospholipid antibody tests.

Cardiolipin Antibody IgM

11 MPL (Ref Interval: 0-12)

INTERPRETIVE INFORMATION: Anti-Cardiolipin IgM

0-12 MPL: Negative
13-19 MPL: Indeterminate
20-80 MPL: Low to Moderately Positive
81 MPL or above: High Positive

The persistent presence of IgG and/or IgM cardiolipin (CL) antibodies in moderate or high levels (greater than 40 GPL and/or greater than 40 MPL units or greater than 99th percentile) is a laboratory criterion for the diagnosis of antiphospholipid syndrome (APS). Persistence is defined as moderate or high levels of IgG and/or IgM CL antibodies detected in two or more specimens drawn at least 12 weeks apart (J Throm Haemost. 2006;4:295-306). Lower positive levels of IgG and/or IgM CL antibodies (above cutoff but less than 40 GPL and/or less than 40 MPL units) may occur in patients with the clinical symptoms of APS; therefore, the actual significance of these levels is undefined. Results should not be used alone for diagnosis and must be interpreted in light of APS-specific clinical manifestations and/or other criteria phospholipid antibody tests.

FACV REF Specimen

Not Done

Factor V Leiden by PCR

Not Done

Because the APCR was negative, the Factor V Leiden by PCR assay was not run.

PT PCR Specimen

whole blood

Prothrombin (F2) G20210A Variant

Negative

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Indication for testing: Assess genetic risk for thrombosis.

NEGATIVE: The Factor II, prothrombin G20210A mutation, was not detected. Other causes of elevated prothrombin levels and hereditary forms of venous thrombosis have not been excluded.

Recommendations: If clinically indicated, testing for other inherited or acquired thrombophilic disorders is recommended including DNA testing for the factor V Leiden mutation, measurement of total plasma homocysteine concentration, serological assays for anticardiolipin antibodies, multiple phospholipid-dependent coagulation assays for lupus inhibitor, protein C activity, protein S activity or free protein S antigen, and antithrombin activity.

This result has been reviewed and approved by Pinar Bayrak-Toydemir, M.D., Ph.D.

BACKGROUND INFORMATION: Prothrombin (F2) c.*97G>A (G20210A) Pathogenic Variant
CHARACTERISTICS: The Factor II, c.*97G>A (G20210A) pathogenic variant is a common genetic risk factor for venous thrombosis associated with elevated prothrombin levels leading to increased rates of thrombin generation and excessive growth of fibrin clots. The expression of Factor II thrombophilia is impacted by coexisting genetic thrombophilic disorders, acquired thrombophilic disorders (eg, malignancy, hyperhomocysteinemia, high factor VIII levels), and circumstances including: pregnancy, oral contraceptive use, hormone replacement therapy, selective estrogen receptor modulators, travel, central venous catheters, surgery, and organ transplantation.
INCIDENCE: Approximately 2 percent of Caucasians and 0.3 percent of African Americans are heterozygous; homozygosity occurs in 1 in 10,000 individuals.
INHERITANCE: Incomplete autosomal dominant.
PENETRANCE: The risk of thrombosis is increased 2-4 fold for heterozygotes and further increased for homozygotes.
CAUSE: Homozygosity or heterozygosity for F2 c.*97G>A (G20210A).
PATHOGENIC VARIANT TESTED: F2 c.*97G>A (G20210A).
CLINICAL SENSITIVITY FOR VENOUS THROMBOSIS: Approximately 10 percent.
METHODOLOGY: Polymerase chain reaction and fluorescence monitoring.
ANALYTICAL SENSITIVITY AND SPECIFICITY: 99 percent.
LIMITATIONS: Diagnostic errors can occur due to rare sequence variations. F2 gene variants, other than c.*97G>A (G20210A), will not be detected.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement C: aruplab.com/CS

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VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Homocysteine, Total	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Protein C Functional	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Protein S Ag Free	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Antithrombin, Enzymatic (Activity)	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
APC Resistance	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Prothrombin Time	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
dRVVT Screen	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
dRVVT 1:1 Mix	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
dRVVT Confirmation	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
PTT-LA Screen (PTT-D)	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Thrombin Time	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Reptilase Time	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
PTT-D Heparin Neutralized	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
PTT-D 1:1 Mix	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Platelet Neutralization (PTT-D, Confirm)	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Hexagonal Phospholipid Neutral Reflex	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Lupus Anticoagulant Interpretation	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Thrombosis Interpretation - Risk	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
B2Glycoprotein 1, IgG Antibody	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
B2Glycoprotein 1, IgM Antibody	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Cardiolipin Antibody IgG	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Cardiolipin Antibody IgM	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
FACV REF Specimen	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Factor V Leiden by PCR	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
PT PCR Specimen	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Prothrombin (F2) G20210A Variant	19-324-401535	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

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