Report Summary

➔ CLICK THE SECTIONS TO NAVIGATE THE REPORT

	LOW RISK/ NORMAL	MEDIUM RISK/ BORDERLINE	HIGH RISK/ ABNORMAL
Maternal Immune Tolerance			
Maternal KIR			■
HY Immunity			
HLA Antibodies			
Parental Chromosome Analysis			
Maternal Chromosomes			
Thrombophilia			
Prothrombin Factor II Alleles			
Leiden Factor V Alleles			
Plasminogen Activator Inhibitor Type I Alleles		■	
Homocysteine			
Blood Clotting Measurements			
Blood Count			
Cell Blood Count (CBC)			
Inflammation			
Total Immunoglobulin			
Complement Activity			
Th1/Th2 Helper T Cell Ratio			
Natural Killer Cell Cytotoxic Activity (NKa)			
Regulatory T Cells			
Autoimmunity			
Antinuclear Antibodies (ANAs)			
Antiphospholipid Antibodies (APAs)			
CCP Antibodies and Rheumatoid Factor			
Autoimmunity Predisposition			
HLA Autoimmune Disease Predisposition			N/A
Thyroid Function			
Thyroid Function		■	
Metabolism			
Insulin Resistance and PCOS Assessment			
Nutrition			
Vitamin D			
Folic Acid			
Fatty Acid Profile			
Leptin Levels			

Next Step Options

Every proposed line of therapy addresses a specific issue and all options may have to be taken into consideration for full benefit.

Immunological/Fertility Consideration

ACOG/ESHRE standard consideration

No recommendations

Other considerations (Based on published clinical trials)

The patient's uterine natural killer cells have a receptor (KIR AA) that may be less compatible with a significant proportion of their potential embryos; the patient may benefit from using G-CSF (Neupogen) to promote immune tolerance.

Hormonal/Metabolic Consideration

Hormonal

No recommendations

Nutritional Consideration

Nutrional

The patient's fatty acid profile is low risk but they may still benefit from EPA/DHA (fish oil) supplementation. We recommend taking 3g per day as a maintenance dose.Because the patient has a history of failures, the patient may benefit from using antioxidant therapy to improve egg quality if they will pursue a natural pregnancy or plan on future egg retrievals.

Further Evaluation

Further

Because some of the patient's thyroid hormone levels are out of range, the patient may want to consult with a thyroid specialist.

Additional Comments

No additional comments

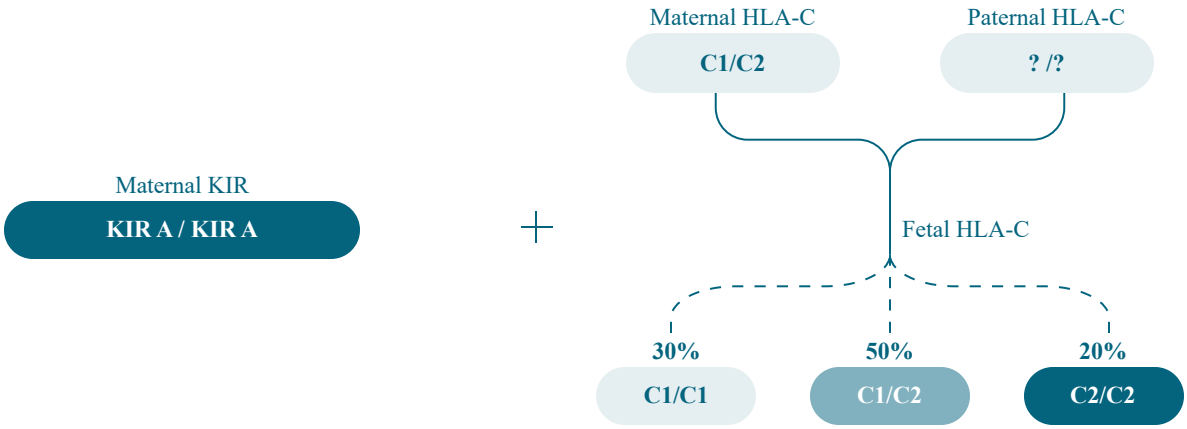
Maternal Immune Tolerance

This section of the report examines the impact of human leukocyte antigens (HLAs) on pregnancy. HLAs are diverse proteins displayed on human cells like a barcode - unique for everyone. The immune system uses HLAs to differentiate “self” from “non-self.” This section includes paternal test results because half of a developing embryo’s HLAs come from their father. These compatibility tests are designed to evaluate how the patient’s immune system may interact with the developing embryo and affect pregnancy.

Maternal KIR

RISK

Higher Risk



LEGEND

KIR A / KIR A	Poor C2 Compatibility
KIR A / KIR B -2DS1	Weak C2 Compatibility
KIR A / KIR B +2DS1	Good C2 Compatibility
KIR B / KIR B	Good C2 Compatibility

LEGEND

Higher C2	Fetal C2 > Maternal C2
Equal C2	Fetal C2 = Maternal C2
Lower C2	Fetal C2 < Maternal C2

WHY WE TEST THIS

A developing embryo's unique HLAs are recognized by the mother's uterine natural killer cells using receptors called killer immunoglobulin-like receptors (KIRs). Some maternal KIRs respond better than others to embryos displaying HLA-C2, which influences how much oxygen and nutrition is sent through the placenta (through spiral artery remodeling). Additionally, if the embryo has more, or in some cases the same number of HLA-C2 alleles than the mother, this could also pose a risk. This test examines the patient's HLA-C2 content, the predicted embryo's HLA-C2 content and whether the maternal KIRs are a good match for HLA-C2. **Learn more →**

WHAT THESE RESULTS MAY MEAN

There is a considerable compatibility concern between the patient’s KIR genes and predicted fetal HLA-C alleles. This could contribute to a weakened immune tolerance towards the embryo’s HLAs and impaired spiral artery remodeling. The patient and their healthcare provider might want to explore the benefit of immune modulating treatments to help promote immune tolerance. Alternatively, the patient may minimize her risk if she selects a sperm donor with a HLA-C allotype: (C1/C1).

HLA Mismatches

RISK

N/A

HLA Class II
Mismatches : **N/A**

DQ Alpha | DQ Beta | HLA-DRB1

Supertype
Mismatches : **N/A**

HLA-DRB3/4/5

LEGEND

- Total lack of mismatch
- Partial mismatch
- Full mismatch

WHY WE TEST THIS

Learn more →

WHAT THESE RESULTS MAY MEAN

HY Immunity

RISK

Lower Risk

HY Restricting Alleles
0

Previous birth to a boy / XY baby
NO

WHY WE TEST THIS

Embryos with a Y chromosome have proteins called HY antigens (male specific minor histocompatibility antigen) on their cells. Occasionally, when a mother gives birth to a boy / baby with a Y chromosome, the mother's immune system can generate an immune response against these HY antigens and interfere with future pregnancies. The mother's HLAs are responsible for initiating this immune response, and some HLA alleles increase the likelihood of this happening. This test determines if the patient carries these higher-risk HY restricting alleles, which might put the patient at higher risk if they've previously given birth to a boy. (An allele is an alternate version of a gene at a specific location of the chromosome.) **Learn more →**

WHAT THESE RESULTS MAY MEAN

There are no concerns that the patient's HLAs put them at increased risk for generating an immune response against HY antigens.

HLA Antibodies

RISK

Lower Risk

Previous Blood Transfusion(s)
0

Previous Full-Term Pregnancy
NO

Previous Lymphocyte Immunization Therapy
0

HLA Class I Antibodies

Antibodies detected: **0**
High concentration (>4K MFI): **0**

A80 **Cw1** **B67**

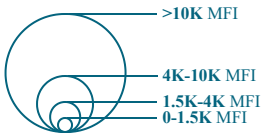
HLA Class II Antibodies

Antibodies detected: **0**
High concentration (>4K MFI): **0**

DR1 **DR10** **DRB3*02:02** **DR12**

LEGEND

Circle area: concentration



Circle color

HLA-C

WHY WE TEST THIS

Sometimes, a person's immune system can develop antibodies to HLAs. These antibodies can target HLAs from previous full-term pregnancies or blood transfusions, or they can specifically target a partner's HLAs - which the embryo will inherit. HLA antibodies are common and aren't necessarily a problem, but partner-specific HLA-C antibodies (a subtype of Class I antibodies) can pose a considerable risk and are associated with early miscarriages and secondary infertility. This test measures how much and what type of HLA antibodies a patient carries, if any. **Learn more →**

WHAT THESE RESULTS MAY MEAN

HLA antibodies were low. HLA antibodies are not a concern.

Maternal Chromosome Analysis

Parental Chromosome Analysis

MATERNAL STATUS

Normal

MATERNAL CHROMOSOME ANALYSIS

Total Chromosomes
46

Sex Chromosomes
XX

Findings
Normal female karyotype

WHY WE TEST THIS

Despite being otherwise healthy, patient with chromosomal abnormalities might have trouble producing eggs with a full set of normal chromosomes. This test visually examines the patient's chromosomes for any major structural anomalies. Please note that the visual nature of this test only detects large chromosomal changes containing multiple genes; it is not a genetic analysis that will detect gene-specific mutations. **Learn more →**

WHAT THESE RESULTS MAY MEAN

No chromosomal abnormalities were observed.

Thrombophilia

While pregnant, a person's risk for blood clots in their veins (venous thromboembolism) increases 5- to 6-fold. If they have hereditary thrombophilia, that risk can increase more than 30-fold. Additionally, thrombophilia increases the chance of blood clots in the placenta, which increases the likelihood of pregnancy loss. These tests examine the patient's risk for thrombophilia to determine if anticoagulants could help improve chances for pregnancy success.

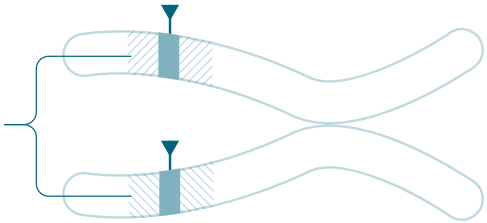
Prothrombin Factor II Alleles

RISK LEVEL

Lower Risk

High risk alleles: **0 out of 2**

Prothrombin Factor II, nucleotide position 20210



LEGEND

A Allele - mutation

G Allele - no mutation

WHY WE TEST THIS

Prothrombin (blood coagulation factor II) has an important role in blood clot formation. The "A" allele of prothrombin increases a person's prothrombin levels, which then increases the risk of thrombophilia and pregnancy complications. This test determines if the patient carries the higher risk "A" allele. **Learn more →**

WHAT THESE RESULTS MAY MEAN

Prothrombin factor II is not a concern.

DISCLAIMER

Please note that this is not a complete thrombophilia assessment. Our limited thrombophilia panel is a combination of three genetic tests designed to provide evidence of inherited gene mutations that are associated with an increased risk for developing thromboembolism (blood clot formation) and experiencing recurrent pregnancy losses. Individuals who have inherited a pathogenic variant for one of these genes may have a predisposition to excessive blood clot formation and miscarriages. In addition, we test for both hyperhomocysteinemia as a risk factor for venous thrombosis and for bleeding disorder by assessing the patient's clotting factors.

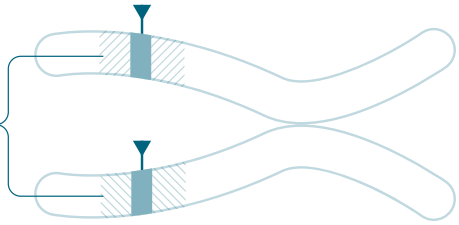
Leiden Factor V Alleles

RISK LEVEL

Lower Risk

High risk alleles: **0 out of 2**

Factor V gene, nucleotide position 1691



LEGEND

A Allele - mutation

G Allele - no mutation

WHY WE TEST THIS

Factor V has an important role in blood clot formation. The Leiden mutation, or "A" allele, causes factor V to remain active longer, which increases the risk of thrombophilia and pregnancy loss. This test determines if the patient carries the higher risk "A" allele. **Learn more →**

WHAT THESE RESULTS MAY MEAN

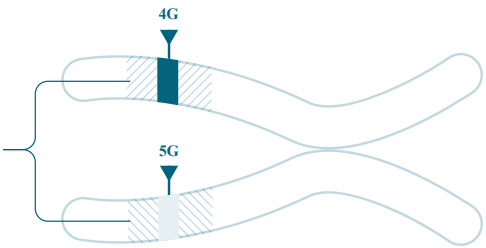
Factor V Leiden is not a concern.

Plasminogen Activator Inhibitor Type I (PAI-1) Alleles

RISK LEVEL

Medium Risk

High risk alleles: **1 out of 2**



LEGEND

4G Allele - mutation

5G Allele - no mutation

WHY WE TEST THIS

Plasminogen activator inhibitor type 1 (PAI-1) is a protein that inhibits a process that prevents blood clots. In other words, less PAI-1 equals better protection against thrombosis. The high risk 4G allele increases levels of PAI-1 and by doing so can increase a person's risk for blood clot and miscarriage. This test determines if the patient carries the higher risk 4G allele. **Learn more →**

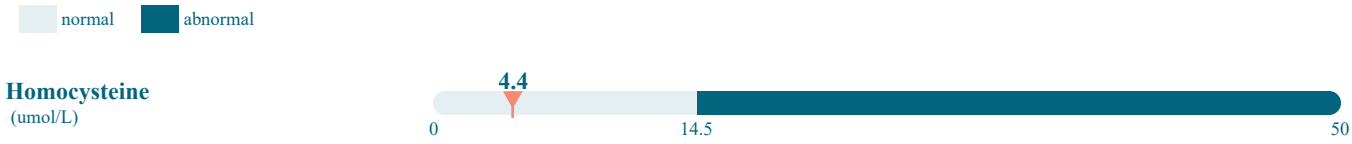
WHAT THESE RESULTS MAY MEAN

The patient has one high risk allele for PAI-1 which might put them at a slightly increased risk for thrombosis and miscarriage. The risk increases if combined with other high risk alleles in factor II or factor V.

Homocysteine

STATUS

Normal



WHY WE TEST THIS

Homocysteine is a metabolic by-product. High homocysteine levels (hyperhomocysteinemia) can indicate a vitamin B12, B6, or folate deficiency, and is a risk factor for thrombosis and cardiovascular disease as well as adverse pregnancy outcomes. **Learn more →**

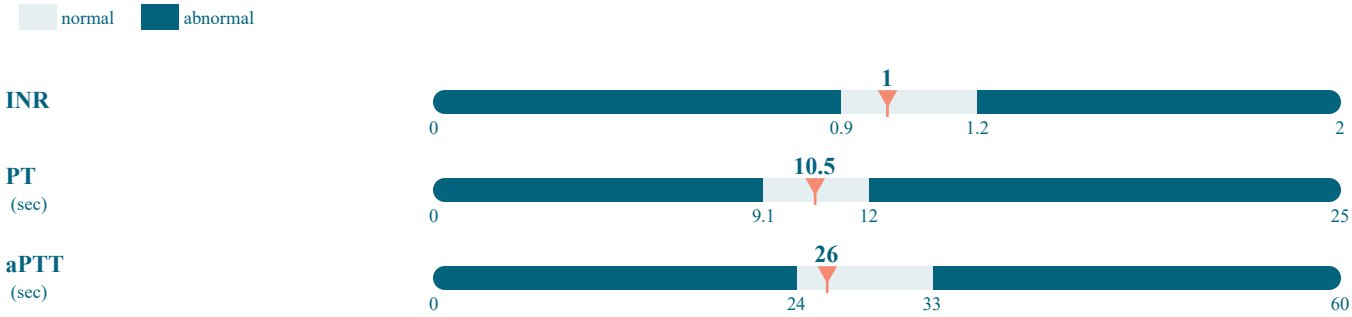
WHAT THESE RESULTS MAY MEAN

The patient's homocysteine levels are normal and do not pose a risk.

Blood Clotting Measurements

STATUS

Normal



WHY WE TEST THIS

PT (prothrombin time), aPTT (activated partial thromboplastin time), and INR (international normalized ratio) are all different measures of a person's blood clotting reaction. PT measures how quickly a patient's blood clots when exposed to an injury like a cut and INR is simply the ratio of the patient's PT to an average population's PT. aPTT measures how quickly a patient's blood clots when exposed to internal vascular damage. If a patient's blood clots too quickly, it could indicate an increased risk of thrombosis.
Learn more →

WHAT THESE RESULTS MAY MEAN

The patient's clotting results appear normal.

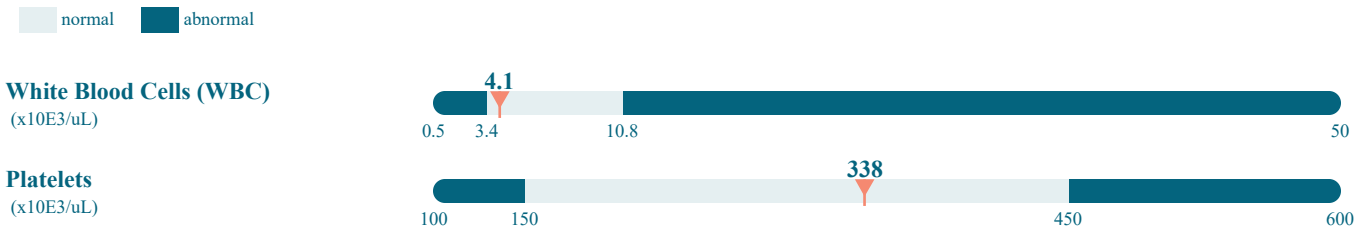
Blood Count

The cells that travel through a person's bloodstream include red blood cells that carry oxygen, white blood cells that belong to the immune system, and platelets that initiate blood clots. Because of the diversity of blood cell functions, these test results contribute to both a patient's thrombophilia assessment and inflammation assessment.

Cell Blood Count (CBC)

STATUS

Normal



WHY WE TEST THIS

A high white blood cell count can indicate that the body is fighting an infection or inflammation. A high platelet count could impact a person's thrombosis risk. These measures might be important to track if the patient undergoes certain immunological treatments like neupogen or prednisone. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient's white blood cell count and platelet count are within the normal range.

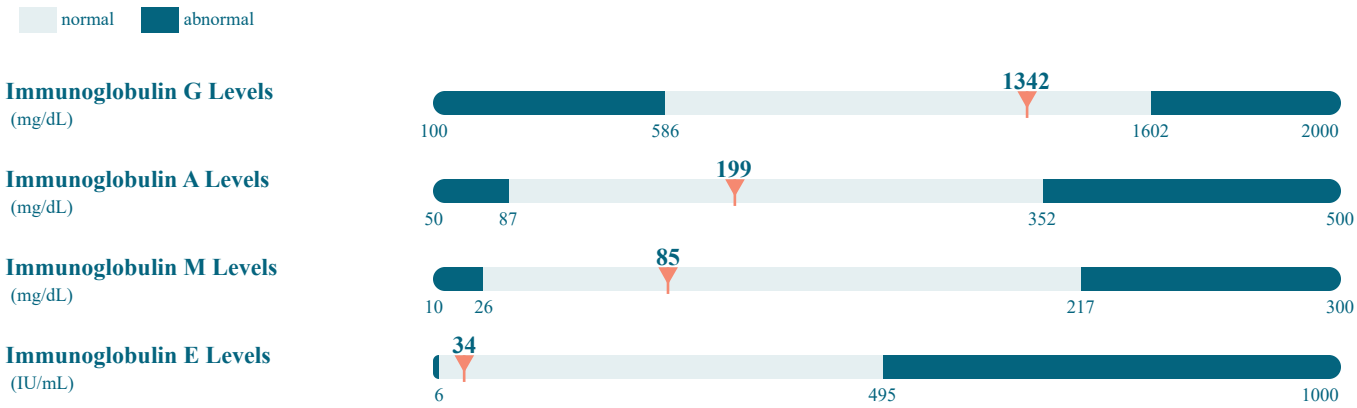
Inflammation

Whether caused by an autoimmune condition, infection, allergies, or another source, different inflammatory markers have been associated with reproductive challenges. During a healthy pregnancy, the body must be able to shift to a relatively anti-inflammatory state to maintain the pregnancy. The following tests are some of the most established markers of inflammation in reproductive immunology. These results can be used to determine if treatments to reduce inflammation could help improve a patient's chances of reproductive success.

Total Immunoglobulin

STATUS

Normal



WHY WE TEST THIS

Immunoglobulins, also known as antibodies, are key mediators of the immune system that identify and neutralize pathogens and other targets. Antibody levels can help indicate allergies and other inflammatory reactions. **Learn more →**

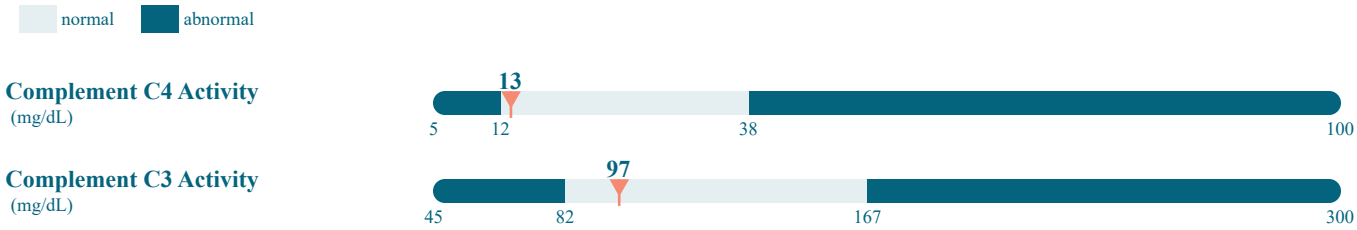
WHAT THESE RESULTS MAY MEAN

All total Immunoglobulin levels are within the normal range.

Complement Activity

STATUS

Normal



WHY WE TEST THIS

The complement system is part of the innate immune system and, when activated, is a strong inducer of inflammation. C3 and C4 are two key proteins in the complement system. Complement activation has been linked to pregnancy complications like pre-eclampsia. **Learn more →**

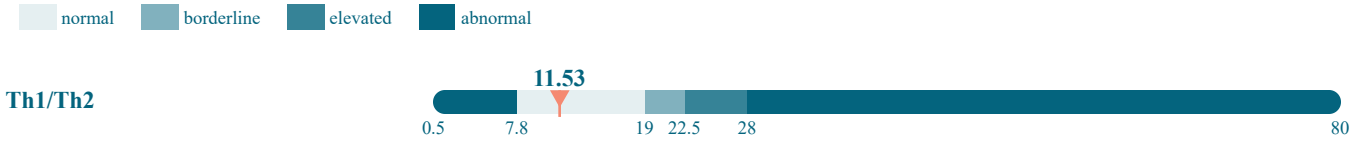
WHAT THESE RESULTS MAY MEAN

The patient's C3 and C4 complement levels are within the optimal range reflecting a complement activity within the normal range.

Th1/Th2 Helper T Cell Ratio*

STATUS

Normal



WHY WE TEST THIS

Some immune cells, like T helper cells, produce molecules that tell the immune system to either kick into high gear (pro-inflammatory) or calm down (anti-inflammatory). Th1 cells are T helper cells that produce pro-inflammatory molecules, while Th2 cells produce anti-inflammatory molecules. The ratio of Th1 to Th2 can help determine the patient's inflammation levels. **Learn more →**

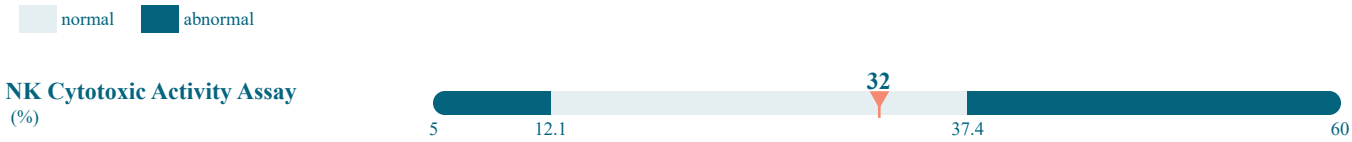
WHAT THESE RESULTS MAY MEAN

The patient has a normal Th1/Th2 ratio.

Natural Killer Cell Cytotoxic Activity (NKa)*

STATUS

Normal



WHY WE TEST THIS

Natural killer (NK) cells are immune cells that have a bad reputation as "killers." However, in addition to killing cells (through cytotoxic activity), NK cells can do many other things like encouraging healthy placental development in the uterus. This test measures how much the patient's NK cells are primed towards killing. High NK cytotoxic activity has been associated with recurrent pregnancy loss. **Learn more →**

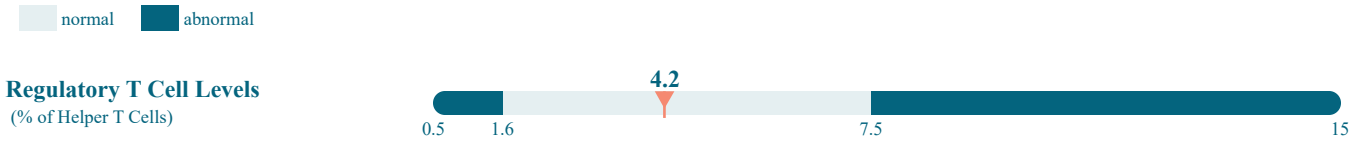
WHAT THESE RESULTS MAY MEAN

The patient's NK cytotoxic activity levels are within the normal range.

Regulatory T Cells*

STATUS

Normal



WHY WE TEST THIS

Regulatory T cells (Treg cells) are specialized immune cells that suppress inflammation and are essential for preventing the uterus from rejecting the embryo. Low Treg levels in the uterus are linked to infertility, recurrent miscarriage, and pregnancy complications. This test measures the patient's circulating Treg cell levels, which can be used to help estimate recruitment of Treg cells to the uterus during pregnancy. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient's Treg cell levels are within the normal range.

***DISCLAIMER**

In the field of reproductive immunology, some functional assays are described which reflect the immune capacity of peripheral blood derived natural killer cells (NK cells) or regulatory T cells. Recent data clearly show that the composition of the immune cells locally in the placenta, where the relevant immune regulation of an ongoing pregnancy takes place, is significantly different from that in the peripheral blood. Nevertheless, data are available showing that increased NK levels in the peripheral blood are associated with pregnancy failure. However, there is no evidence that these peripheral NK cells are directly responsible for the failure. The phenotypic characteristics and function of uterine Natural Killer cells are completely different from those of the peripheral blood derived NK cells. Similarly, scientific literature shows a difference in immune regulation by regulatory T cells in the peripheral blood versus the placenta, in which partner specific regulatory T cells are ind

Autoimmunity

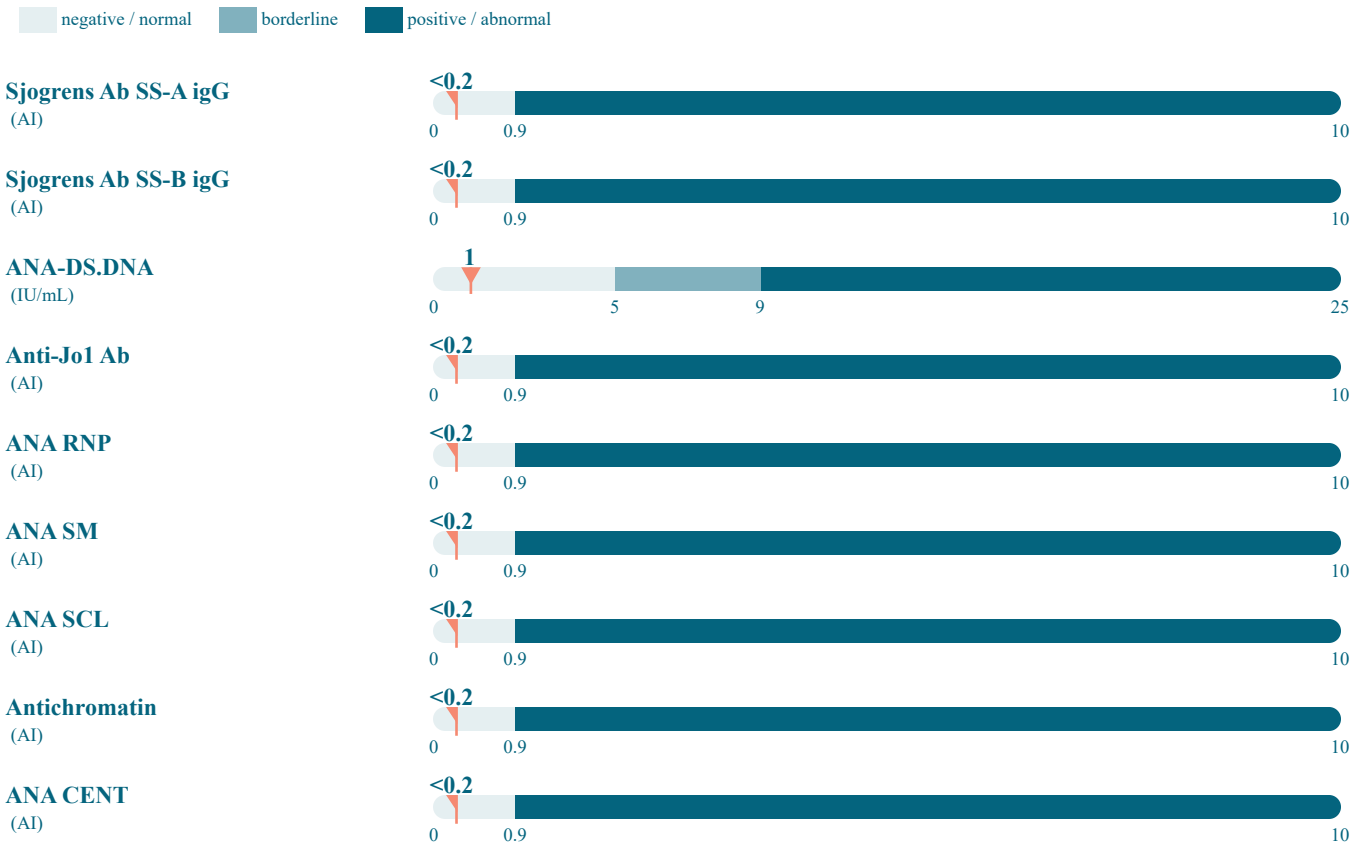
Many autoimmune diseases can raise a patient's chances for adverse pregnancy outcomes, which is why expectant mothers with antiphospholipid syndrome, lupus, rheumatoid arthritis, and other autoimmune disorders are considered high-risk pregnancies.

However, many people remain undiagnosed for autoimmune conditions. These tests help determine a patient's risk for various autoimmune conditions, which are each treated accordingly.

Antinuclear Antibodies (ANAs)

STATUS

Normal



WHY WE TEST THIS

The nucleus of a cell contains DNA and diverse proteins required to keep the cell functioning. Sometimes, a person's immune system will begin to attack proteins in the nucleus by developing antinuclear antibodies (ANAs). When present in high concentrations, ANAs could indicate an autoimmune disease such as lupus. These tests assess the presence of different ANAs. **Learn more →**

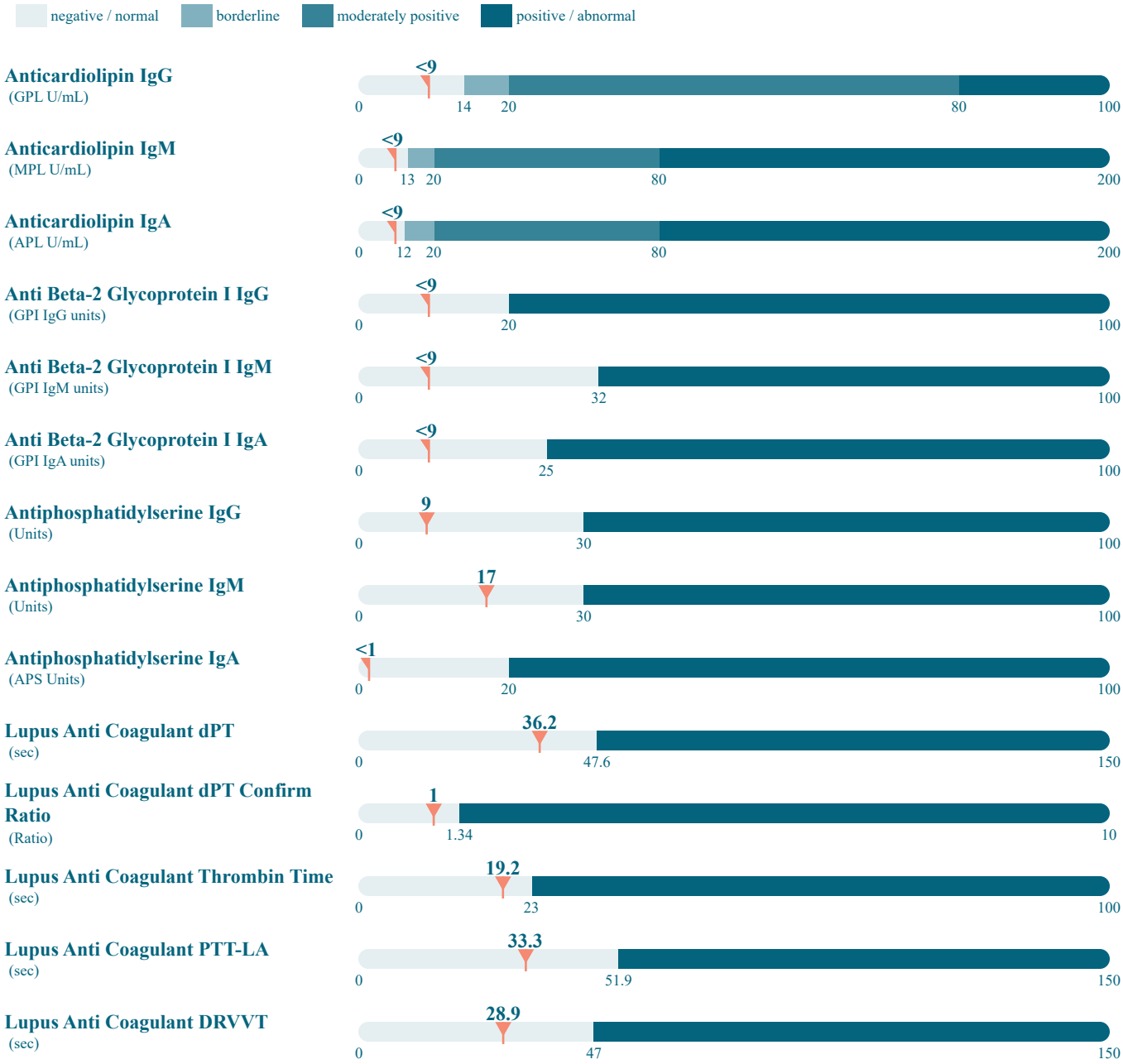
WHAT THESE RESULTS MAY MEAN

The patient is negative for all ANAs tested.

Antiphospholipid Antibodies (APAs)

STATUS

Normal



WHY WE TEST THIS

Phospholipids are integral components of human cell membranes. Sometimes, a person's immune system will begin to attack its own phospholipids by developing antiphospholipid antibodies (APAs). Because blood cells contain phospholipids, APAs can lead to blood clots, miscarriages, or pregnancy complications. These tests assess the presence of different APAs. **Learn more →**

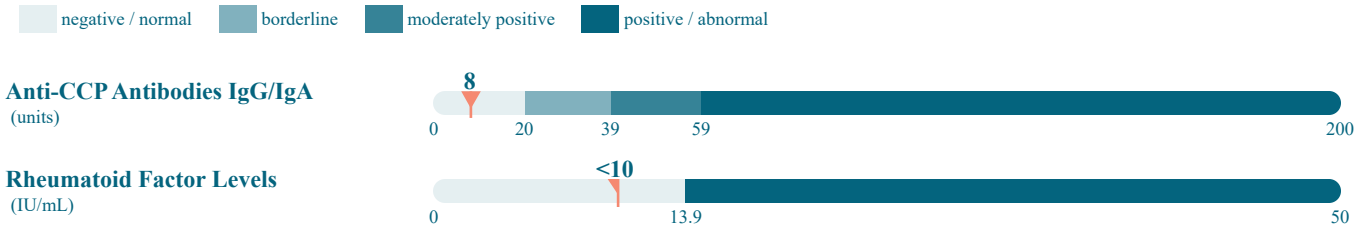
WHAT THESE RESULTS MAY MEAN

The patient is negative for all APAs tested.

CCP Antibodies and Rheumatoid Factor

STATUS

Normal



WHY WE TEST THIS

Cyclic citrullinated protein (CCP) antibodies and rheumatoid factor are antibodies that can indicate rheumatoid arthritis and some other autoimmune diseases. These tests assess the presence of these antibodies. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient is negative for both Rheumatoid Factor and Anti-CCP antibodies.

Autoimmunity Predisposition*

Autoimmune diseases are thought to arise from a combination of a person's genetics and environment. Although being genetically predisposed to autoimmunity might raise a person's chances for developing an autoimmune disease, it is not a guarantee.

HLA Autoimmune Disease Predisposition

RISK LEVEL

N/A

HLA Alleles Associated with Autoimmune Disease
DRB1*07:01, DRB4*01:03

Associated Autoimmune Diseases
Endometriosis, Primary antiphospholipid syndrome

WHY WE TEST THIS

Human Leukocyte Antigen (HLA) genes play an integral role in activating the immune response. Some HLA alleles change the features of a person's HLAs to make them more likely to inappropriately trigger the immune response and develop an autoimmune condition. This genetic test looks at different alleles of the patient's HLA genes which might predispose the patient to autoimmune issues than can interfere with a healthy pregnancy.
Learn more →

WHAT THESE RESULTS MAY MEAN

The patient harbors several HLA alleles that confer genetic predispositions to many conditions that may affect one’s fertility.

***DISCLAIMER**

Please note that being predisposed to certain diseases does not mean a patient will actually develop the disease. Besides genetics, the risk for developing a particular condition is linked to a person's family history (indicating an increased risk) and other factors including environmental factors and lifestyle that may trigger the development of an autoimmune condition.

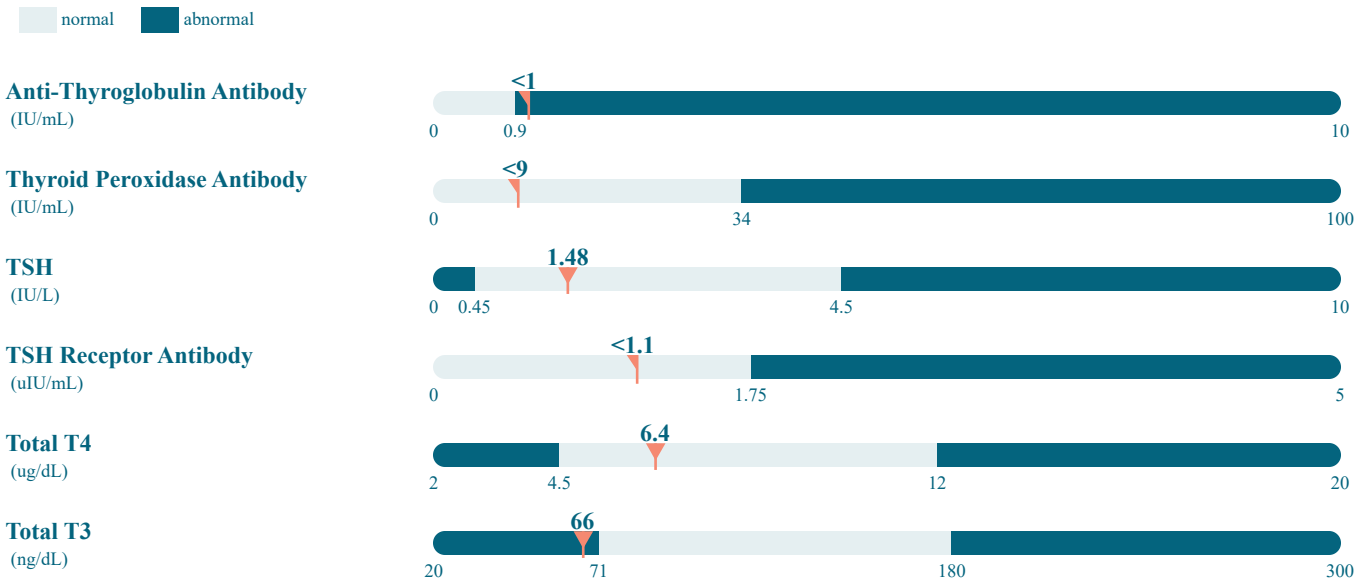
Thyroid Function

The thyroid is a butterfly-shaped gland located in the neck. It secretes hormones that regulate metabolism, body temperature, the cardiovascular system, and the digestive system. The thyroid's proper function is crucial when pregnant because the mother's thyroid hormones affect fetal growth and brain development.

Thyroid Function

STATUS

Borderline



WHY WE TEST THIS

Thyroid disorders can contribute to pregnancy complications, miscarriage, or a person's ability to get pregnant. Thyroid disorders sometimes arise from autoimmune problems where a person develops antibodies to specific parts of the thyroid. These tests look for thyroid antibodies as well as measure hormone levels related to healthy thyroid functioning. **Learn more →**

WHAT THESE RESULTS MAY MEAN

Some of the patient's hormone levels are out of range but no antibodies were detected. The patient might discuss treatment options to restore healthy thyroid function with their healthcare provider or a thyroid specialist.

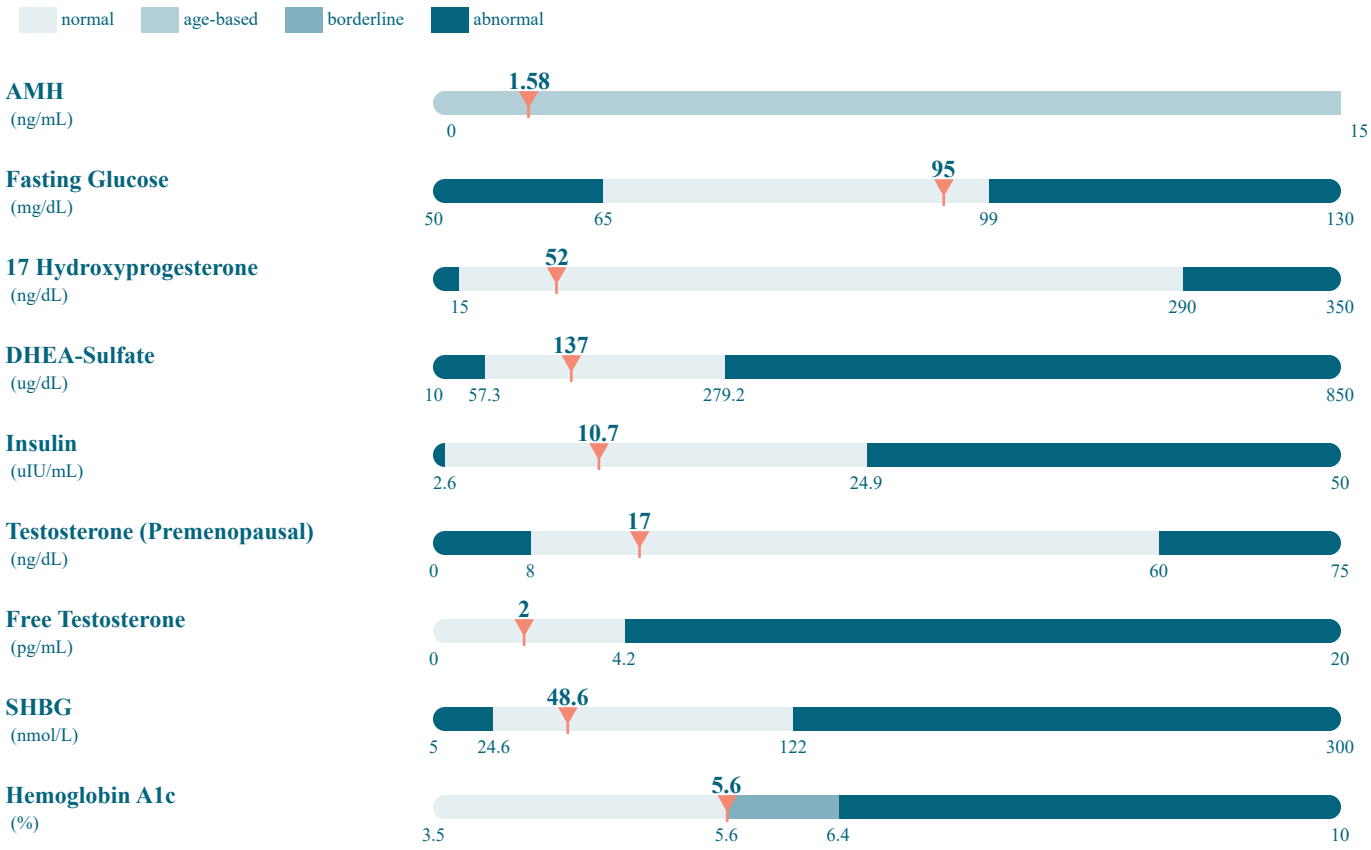
Metabolism

Metabolic disorders, like diabetes and PCOS, can increase a person's chance for infertility and miscarriage. When these disorders are properly diagnosed, studies indicate that taking metformin and/or getting blood sugar levels under control could help reduce chances of miscarriage or pregnancy complications. These tests look for signs of metabolic problems.

Insulin Resistance and Polycystic Ovarian Syndrome (PCOS) Assessment

RISK LEVEL

Lower Risk



WHY WE TEST THIS

Polycystic ovarian syndrome (PCOS) is a common endocrine condition, characterized by high levels of androgens and resistance to insulin. People with PCOS are at an increased risk for infertility and pregnancy complications such as gestational diabetes and hypertension. These tests look for signs of insulin resistance and hormonal dysregulation. **Learn more →**

WHAT THESE RESULTS MAY MEAN

Results are normal. There is no indication of insulin resistance or type 2 diabetes. Based on the Rotterdam criteria, the patient is not likely to have PCOS.

Nutrition

Diet can impact a person's ability to get pregnant and deliver a healthy baby. Certain dietary deficiencies can increase the risk of pregnancy complications or birth defects, while other dietary imbalances can lead to increased levels of inflammation. These tests examine a few of the most important nutritional markers for pregnancy to help determine if a dietary supplement or other dietary action could help.

Vitamin D

STATUS

Normal

normal borderline low abnormal

25 Hydroxy Vitamin D levels
(ng/mL)

WHY WE TEST THIS

Vitamin D has an essential role in immune health and calcium absorption. Low levels of vitamin D are linked to recurrent pregnancy loss and numerous pregnancy complications. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient has healthy vitamin D levels and does not require supplementation.

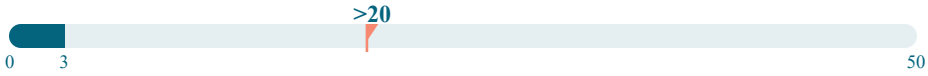
Folic Acid

STATUS

Normal

normal abnormal

Folic Acid levels
(ng/mL)



WHY WE TEST THIS

Folic acid, also known as vitamin B-9, is naturally found in many foods. It is added to prenatal vitamins and many fortified foods such as cereal. Folic acid is a crucial nutrient during early pregnancy and can help reduce the risk of birth defects. **Learn more →**

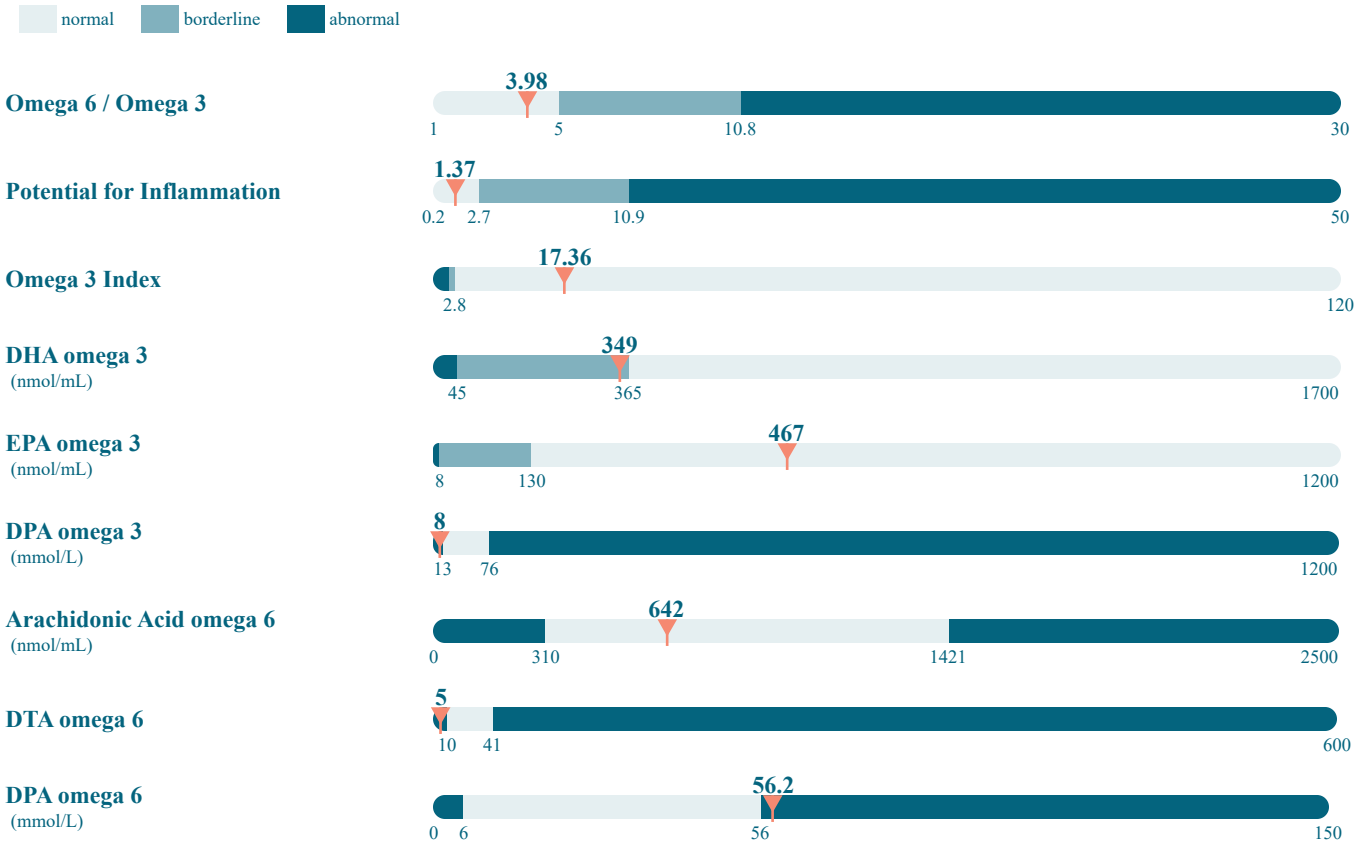
WHAT THESE RESULTS MAY MEAN

The patient has healthy folic acid levels.

Fatty Acid Profile

RISK LEVEL

Lower Risk



WHY WE TEST THIS

Omega 3 and omega 6 fatty acids are important classes of dietary fats. Omega 3 fatty acids, like EPA and DHA, are well known for their anti-inflammatory properties and have been found to help lower the risk of pregnancy complications. Omega 6 fatty acids aren't inherently bad, but without a healthy intake of omega 3 fatty acids, could promote inflammation. These tests look at omega 3 levels and determine if they're sufficient to counterbalance omega 6 levels. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient's omega 3 intake appears sufficient, and they may benefit from taking a 3g EPA/DHA daily supplement to help maintain a good omega 6 / omega 3 balance.

Leptin Levels

STATUS

Normal

WHY WE TEST THIS

Leptin is a hormone released by fat cells that regulates hunger and many aspects of pregnancy. High leptin levels are linked to multiple reproductive issues including impaired egg production, pregnancy failures and complications. Low leptin levels might be linked to miscarriage. **Learn more →**

WHAT THESE RESULTS MAY MEAN

The patient's leptin levels are within the normal range.

Date Collected: **12/31/2024** Date Received: **12/31/2024** Date Reported: **01/08/2025** Fasting: **Yes**

Ordered Items: **Fatty Acid Profile, Essential; PT and PTT; Testosterone,Free and Total; Hemoglobin A1c; DHEA-Sulfate; 17-OH Progesterone LCMS; Leptin, Serum; Glucose, Plasma; Insulin; Sex Horm Binding Glob, Serum; Venipuncture**

Date Collected: **12/31/2024**

Fatty Acid Profile, Essential

	Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
	Interp, Fatty Acids Profile SP [01]	See Note				
		In this sample the concentration of omega-3 eicosapentaenoic acid (EPA) was elevated, most likely reflecting dietary supplements. Results reviewed and interpreted by Marzia Pasquali, PhD, FACMG INTERPRETIVE INFORMATION: Fatty Acids Profile, Essential Ser/Plas This test does not screen for disorders of peroxisomal biogenesis/function. This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.				
	Arachidic Acid, C20:0 [01]	25			nmol/mL	8-43
	Arachidonic Acid, C20:4w6 [01]	642			nmol/mL	310-1420
	DHA, C22:6w3 [01]	349			nmol/mL	45-365
	DPA, C22:5w3 [01]	66			nmol/mL	13-75
	DPA, C22:5w6 [01]	8			nmol/mL	6-55
▼	**DTA, C22:4w6** [01]	**5**	**Low**		nmol/mL	10-40
	Docosenoic Acid, C22:1 [01]	3			nmol/mL	1-10
▲	**EPA, C20:5w3** [01]	**467**	**High**		nmol/mL	8-130
	Hexadecenoic Acid, C16:1w9 [01]	35			nmol/mL	14-95
	Lauric Acid, C12:0 [01]	4			nmol/mL	1-200
	Linoleic Acid, C18:2w6 [01]	3035			nmol/mL	1210-4300
	a-Linolenic Acid, C18:3w3 [01]	52			nmol/mL	20-200
▼	**h-g-Linolenic C20:3w6** [01]	**42**	**Low**		nmol/mL	45-340
	g-Linolenic Acid, C18:3w6 [01]	10			nmol/mL	10-120
	Mead Acid, C20:3w9 [01]	3			nmol/mL	1-35
	Myristic Acid, C14:0 [01]	60			nmol/mL	20-520
	Nervonic Acid, C24:1w9 [01]	112			nmol/mL	35-145
	Oleic Acid, C18:1w9 [01]	1802			nmol/mL	740-3900
	Palmitic Acid, C16:0 [01]	2468			nmol/mL	1090-3840
	Palmitoleic Acid, C16:1w7 [01]	93			nmol/mL	35-580
	Stearic Acid, C18:0 [01]	801			nmol/mL	280-1250
	Vaccenic Acid, C18:1w7 [01]	118			nmol/mL	50-250
	Triene Tetraene Ratio [01]	0.005				0.004-0.051
	Total Saturated Acid [01]	3.4			mmol/L	1.5-5.3
	Total Monounsaturated Acid [01]	2.2			mmol/L	0.9-4.7

Date Collected: **12/31/2024**

Fatty Acid Profile, Essential (Cont.)

	Total Polyunsaturated Ac [01]	4.7			mmol/L	2.1-6.2
▲	**Total w3** [01]	**0.93**	**High**		mmol/L	0.12-0.55
	Total w6 [01]	3.7			mmol/L	1.8-5.7
	Total Fatty Acids [01]	10.2			mmol/L	4.5-15.0
	EER Fatty Acids Profile, Essen [01]	See Note				

```
Authorized individuals can access the ARUP Enhanced Report
with an ARUP Connect account using the following link.

Your local lab can assist you in obtaining the patient
report if you don't have a Connect account.

https://erpt.aruplab.com/?t=06240A6g4Sz6Cz9362
```

	IMAGE [01]	.				

PT and PTT

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
INR [02]	1.0			0.9-1.2

```
Reference interval is for non-anticoagulated patients.
Suggested INR therapeutic range for Vitamin K
antagonist therapy:
   Standard Dose (moderate intensity
                  therapeutic range):      2.0 - 3.0
   Higher intensity therapeutic range      2.5 - 3.5
```

Prothrombin Time [02]	10.5		sec	9.1-12.0
aPTT [02]	26		sec	24-33

```
This test has not been validated for monitoring unfractionated heparin
therapy. aPTT-based therapeutic ranges for unfractionated heparin
therapy have not been established. For general guidelines on
Heparin monitoring, refer to the LabCorp Directory of Services.
```

Testosterone,Free and Total

Test	Current Result and Flag	Previous Result and Date		Units	Reference Interval
Testosterone [02]	17	24*	12/23/2020	ng/dL	4-50
Free Testosterone(Direct) [02]	2.0			pg/mL	0.0-4.2

* Previous Reference Interval: (Testosterone: 8-48 ng/dL)

Hemoglobin A1c

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Hemoglobin A1c [02]	5.6		%	4.8-5.6
Please Note: [02]				

```
Prediabetes: 5.7 - 6.4
Diabetes: >6.4
Glycemic control for adults with diabetes: <7.0
```

DHEA-Sulfate

Test	Current Result and Flag	Previous Result and Date		Units	Reference Interval
DHEA-Sulfate [02]	137.0	145.0	11/29/2024	ug/dL	57.3-279.2

Date Collected: **12/31/2024**

17-OH Progesterone LCMS

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
17-OH Progesterone LCMS [A, 03]	52		ng/dL	
		Adult Female		
		Follicular		15 - 70
		Luteal		35 - 290

Leptin, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Leptin, Serum [B, 03]	7.1		ng/mL	

Female Ranges by Body Mass Index (BMI)

BMI	Range	BMI	Range
11	0.7 - 3.6	24	4.4 - 24.2
12	0.8 - 4.2	25	5.1 - 28.0
13	0.9 - 4.8	26	5.9 - 32.4
14	1.0 - 5.6	27	6.8 - 37.5
15	1.2 - 6.5	28	7.9 - 43.5
16	1.4 - 7.5	29	9.1 - 50.4
17	1.6 - 8.7	30	10.6 - 58.3
18	1.8 - 10.0	31	12.2 - 67.5
19	2.1 - 11.6	32	14.1 - 78.2
20	2.4 - 13.4	33	16.4 - 90.5
21	2.8 - 15.6	34	19.0 - 105.0
22	3.3 - 18.0	35	22.0 - 121.0
23	3.8 - 20.9	36	25.4 - 141.0

Blum WF, Juul A, "Reference Ranges of Leptin Levels According to Body Mass Index, Gender and Development Stage" in Leptin: The Voice of Adipose Tissue, Blumm WF, Kiess WF, and Rascher W, eds, 1997, 319-326.

Glucose, Plasma

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Glucose, Plasma [02]	95		mg/dL	70-99
		Please Note:		
		Prediabetes		100 - 125
		Diabetes		>125

Insulin

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Insulin [02]	10.7		uIU/mL	2.6-24.9

Sex Horm Binding Glob, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Sex Horm Binding Glob, Serum [02]	48.6		nmol/L	24.6-122.0

Disclaimer
The Previous Result is listed for the most recent test performed by Labcorp in the past 5 years where there is sufficient patient demographic data to match the result to the patient. Results from certain tests are excluded from the Previous Result display.

Icon Legend
▲ Out of Reference Range ■ Critical or Alert

Comments
A: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.
B: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.

Performing Labs
01: Y8 - ARUP Laboratories Inc, 500 Chipeta Way, Salt Lake City, UT 84108-1221 Dir: Jonathan Genzen, MDPhD
02: RN - Labcorp Raritan, 69 First Avenue, Raritan, NJ 08869-1800 Dir: Liza Jodry, MD
03: BN - Labcorp Burlington, 1447 York Court, Burlington, NC 27215-3361 Dir: Sanjai Nagendra, MD
For inquiries, the physician may contact Branch: 800-631-5250 Lab: 800-631-5250

Patient Details
Song, Julee
600 12TH ST APT 803, PALISADES PARK, NJ, 07650

Phone: **551-804-6028**
Date of Birth: **05/18/1982**
Age: **42**
Sex: **Female**
Patient ID: **1006421**
Alternate Patient ID: **7383**

Physician Details
M IRANI
PREGIMMUNE CORP DBA PREGMUNE
344 GROVE ST PMB 60570, JERSEY CITY, NJ, 073025923

Phone: **201-409-4100**
Account Number: **29088990**
Physician ID:
NPI: **1154602670**

Specimen Details
Specimen ID: **366-436-2293-0**
Control ID: **6477**
Alternate Control Number: **6477**
Date Collected: **12/31/2024 0738 Local**
Date Received: **12/31/2024 0000 ET**
Date Entered: **12/31/2024 1122 ET**
Date Reported: **01/08/2025 1405 ET**

Fatty Acids Profile, Essential Serum or Plasma

Patient: SONG, JULEE
DOB: 05/18/1982 Age: 42 Sex: F
Patient Identifiers: 36643622930

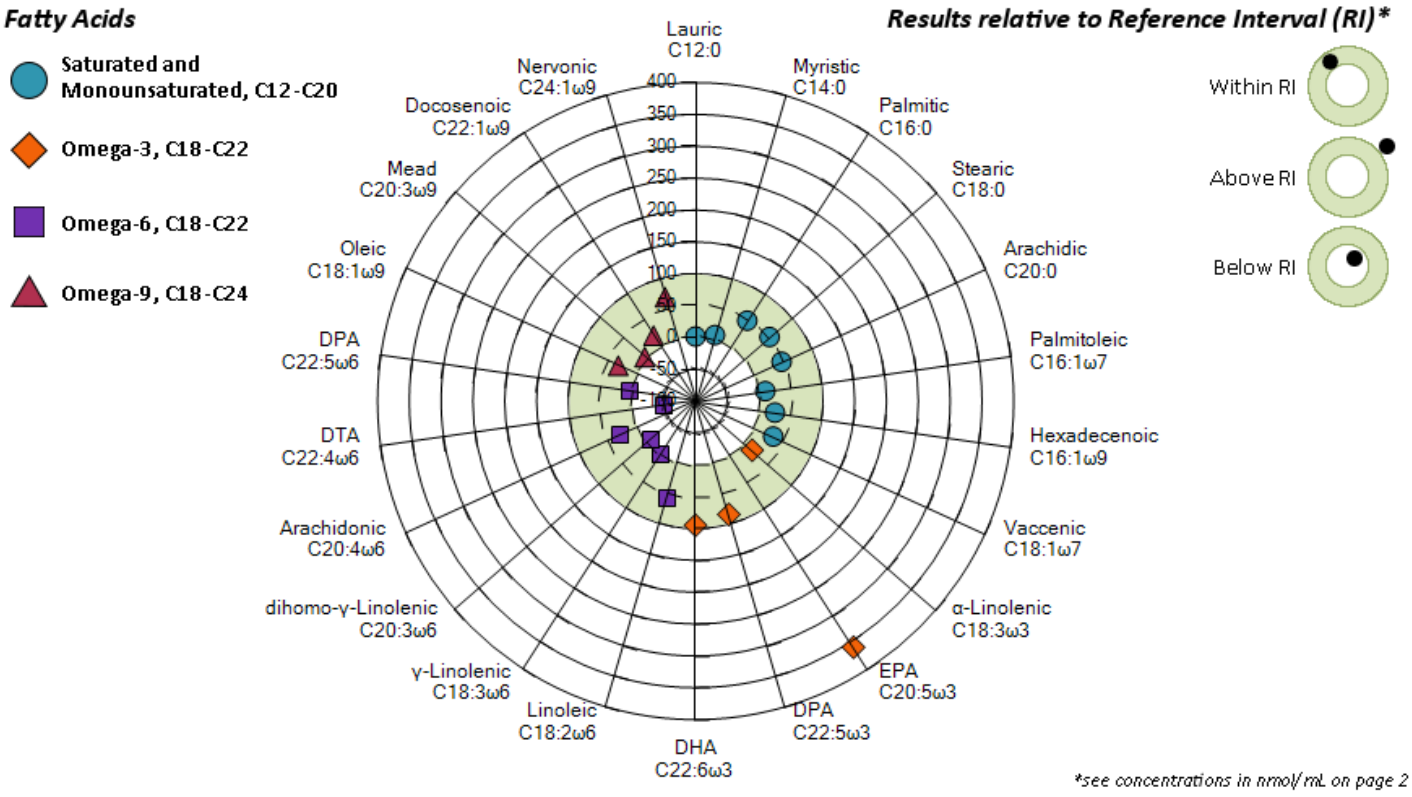
Visit Number (FIN): 29088990

Client: Labcorp Sendouts/Raritan
69 First Ave Sendout Lab
Raritan, NJ 08869

Physician: M IRANI

ARUP Test Code: 2013518

Collection Date: 12/31/2024
Received in lab: 01/03/2025
Completion Date: 01/08/2025



*see concentrations in nmol/mL on page 2

	Ratio	Totals (mmol/L)					
	Triene:Tetraene	**Saturated**	**Monounsaturated**	**Polyunsaturated**	**Omega-3**	**Omega-6**	**Fatty Acids**
Results	0.005	3.4	2.2	4.7	**0.93 H**	3.7	10.2
Ref Interval	*0.004-0.051*	*1.5-5.3*	*0.9-4.7*	*2.1-6.2*	*0.12-0.55*	*1.8-5.7*	*4.5-15.0*

Interpretation

In this sample the concentration of omega-3 eicosapentaenoic acid (EPA) was elevated, most likely reflecting dietary supplements.

Results reviewed and interpreted by Marzia Pasquali, PhD, FACMG

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Jonathan R. Genzen, MD, PhD, Laboratory Director

Chart continues on following page(s)

Patient: SONG, JULEE | **Date of Birth:** 05/18/1982 | **Sex:** F | **Physician:** M IRANI
Patient Identifiers: 36643622930 **| Visit Number (FIN):** 29088990

Patient Results

Fatty Acids	Values (nmol/mL)	Flag	Reference Interval
Arachidic Acid, C20:0	25		8-43
Arachidonic acid, C20:4w6	642		310-1420
DHA, C22:6w3	349		45-365
DPA, C22:5w3	66		13-75
DPA, C22:5w6	8		6-55
DTA, C22:4w6	**5**	**L**	**10-40**
Docosenoic Acid, C22:1	3		1-10
EPA, C20:5w3	**467**	**H**	**8-130**
Hexadecenoic Acid, C16:1w9	35		14-95
Lauric Acid, C12:0	4		1-200
Linoleic Acid, C18:2w6	3035		1210-4300
a-Linolenic Acid, C18:3w3	52		20-200
h-g-Linolenic C20:3w6	**42**	**L**	**45-340**
g-Linolenic Acid, C18:3w6	10		10-120
Mead Acid, C20:3w9	3		1-35
Myristic Acid, C14:0	60		20-520
Nervonic Acid, C24:1w9	112		35-145
Oleic Acid, C18:1w9	1802		740-3900
Palmitic Acid, C16:0	2468		1090-3840
Palmitoleic Acid, C16:1w7	93		35-580
Stearic Acid, C18:0	801		280-1250
Vaccenic Acid, C18:1w7	118		50-250

Compliance

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Disclaimer

This test does not screen for disorders of peroxisomal biogenesis/function.

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Jonathan R. Genzen, MD, PhD, Laboratory Director

END OF CHART

Date Collected: **12/21/2024** Date Received: **12/21/2024** Date Reported: **01/15/2025** Fasting: **No**

Ordered Items: **Lupus Anticoagulant Comp; CBC With Differential/Platelet; Killer Immunoglobulin-like Rec; Antinuclear Ab 9 by Multiplex; HLA-DRB1 (HR) DRB345 (IR); Chromosome, Blood, Routine; PAI-1 Gene Polymorphism; Antiphosphatidylserine IgG/M/A; Anticardiolip Ab, IgA/G/M, Qn; Beta-2 Glycoprotein I Ab,G,A,M; HLA DQA1 (IR); HLA DQB1 (HR); HLA-A (IR); HLA-B (IR); HLA-C (HR); HLA Class I Antibody HD; HLA Class II Antibody HD; Anti-Mullerian Hormone (AMH); Factor V Leiden Mutation; Factor II, DNA Analysis; Complement C4, Serum; Folate (Folic Acid), Serum; TSH; Complement C3, Serum; Rheumatoid Factor (RF); Thyrotropin Receptor Ab, Serum; Vitamin D, 25-Hydroxy; Anti-CCP Ab, IgG/IgA; Homocyst(e)ine; Immunoglobulin E, Total; Thyroxine (T4); Triiodothyronine (T3); Thyroglobulin Antibody; Immunoglobulin G, Qn, Serum; Immunoglobulin A, Qn, Serum; Immunoglobulin M, Qn, Serum; Thyroid Peroxidase (TPO) Ab; Venipuncture; Count 15-20 cells, 2 Karyotype**

General Comments & Additional Information

A duplicate report has been generated due to demographic updates.

Date Collected: **12/21/2024**

Lupus Anticoagulant Comp

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Dilute Prothrombin Time(dPT) [01]	36.2		sec	0.0-47.6
dPT Confirm Ratio [01]	1.00		Ratio	0.00-1.34
Thrombin Time [01]	19.2		sec	0.0-23.0
. [02]				
Lupus Anticoagulant Reflex [01]				
PTT-LA [01]	33.3		sec	0.0-43.5
dRVVT [01]	28.9		sec	0.0-47.0
Lupus Reflex Interpretation [01]	Comment: No lupus anticoagulant was detected.			

CBC With Differential/Platelet

Test	Current Result and Flag	Previous Result and Date		Units	Reference Interval
WBC [02]	4.1	4.3	03/19/2024	x10E3/uL	3.4-10.8
RBC [02]	4.47	4.58	03/19/2024	x10E6/uL	3.77-5.28
Hemoglobin [02]	14.3	15.1	03/19/2024	g/dL	11.1-15.9
Hematocrit [02]	43.3	44.5	03/19/2024	%	34.0-46.6
MCV [02]	97	97	03/19/2024	fL	79-97
MCH [02]	32.0	33.0	03/19/2024	pg	26.6-33.0
MCHC [02]	33.0	33.9	03/19/2024	g/dL	31.5-35.7
RDW [02]	11.9	12.0	03/19/2024	%	11.7-15.4
Platelets [02]	338	338	03/19/2024	x10E3/uL	150-450
Neutrophils [02]	61	61	03/19/2024	%	Not Estab.
Lymphs [02]	28	28	03/19/2024	%	Not Estab.
Monocytes [02]	7	9	03/19/2024	%	Not Estab.
Eos [02]	3	1	03/19/2024	%	Not Estab.
Basos [02]	1	1	03/19/2024	%	Not Estab.
Neutrophils (Absolute) [02]	2.5	2.6	03/19/2024	x10E3/uL	1.4-7.0

CBC With Differential/Platelet (Cont.)

Lymphs (Absolute) [02]	1.2	1.2	03/19/2024	x10E3/uL	0.7-3.1
Monocytes(Absolute) [02]	0.3	0.4	03/19/2024	x10E3/uL	0.1-0.9
Eos (Absolute) [02]	0.1	0.1	03/19/2024	x10E3/uL	0.0-0.4
Baso (Absolute) [02]	0.0	0.0	03/19/2024	x10E3/uL	0.0-0.2
Immature Granulocytes [02]	0	0	03/19/2024	%	Not Estab.
Immature Grans (Abs) [02]	0.0	0.0	03/19/2024	x10E3/uL	0.0-0.1

Killer Immunoglobulin-like Rec

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
2DL1 [03]	Present KIR2DL1*0010101-0010104,0020101-0020119,00202,00301, 0030201-0030243, KIR2DL1*00303-00309,008,009,01201,01202,014-021,02201, KIR2DL1*02202,023,025-027,030,031,0320101N,0320102N, 0320103N, KIR2DL1*033,034,036,0370101,0370102,038,040,0430101,0430102, KIR2DL1*044,0450101N,0450102N,0450103N,046,0470101,0470102, KIR2DL1*048,049,053,057,0590101,0590102,060-063,0640101, KIR2DL1*0640102,065,069,071-077			
2DL2 [03]	Absent			
2DL3 [03]	Present KIR2DL3*0010101-0010115,00102-00112,0020101-0020103,003, KIR2DL3*004,00501-00503,006,007,008N,009-011,01201,01202, KIR2DL3*013-017,01801,01802,019-031,034-037			
2DL4 [03]	Present KIR2DL4*0010201-0010203,0010301-0010309,00105-00108,00202, KIR2DL4*0050101-0050107,00503,00504,0080101-0080108,00803, KIR2DL4*0080401,0080402,0110101-0110104,01102,01201,013-016, KIR2DL4*018-021,023-034,036,038,040-042,044,045,047-051, KIR2DL4*053-059			
2DL5 [03]	Absent			
2DS1 [03]	Absent			
2DS2 [03]	Absent			
2DS3 [03]	Absent			
2DS4 FUL [03]	Present KIR2DS4*0010101-0010109,00102-00106,01101,01102,014-017, KIR2DS4*019-024			
2DS4 DEL [03]	Absent			
2DS5 [03]	Absent			
3DL1 [03]	Present KIR3DL1*0010101-0010111,00102-00105,0070101-0070106,00702, KIR3DL1*00703,0080101,0080102,0090101-0090104, 0150101-0150103, KIR3DL1*0150201-0150218,01503-01508,016,01701,01702,018, KIR3DL1*0200101-0200103,023,024N,0250101-0250103,026,02701, KIR3DL1*02702,028,030,0310101,0310102,03102,032,033,037, KIR3DL1*043,051,052,062,066-068,070,074,076,077,079,080, KIR3DL1*081N,086,088-090,092,093,094N,095,096,101-103, KIR3DL1*112,114,116,118,121			

Killer Immunoglobulin-like Rec (Cont.)

3DL2 [03]	Present KIR3DL2*0010101,0010102,00102,0010301,0010302,00104-00107, KIR3DL2*00109,0020101-0020106,00202-00204,00301-00304, KIR3DL2*004,00501,00502,00601,00602,0070101-0070103, 00702-00711, KIR3DL2*00801,00802,01001-01004,01101-01103,012,01301-01303, KIR3DL2*015-018,020-035,038-041,04301,04302,044-049,051-059, KIR3DL2*06001,06002,061,063-073,075-077,07901,07902,080-083, KIR3DL2*085-098,10001,10002,101-105,10601,10701,10801, KIR3DL2*109,11001,11002,111,113-117
3DL3 [03]	Present KIR3DL3*0010101-0010104,0010201-0010203,00103-00105,0020101, KIR3DL3*0020102,0020201-0020204,00203-00205,0020601-0020605, KIR3DL3*0020701,0020702,00208-00211,0030101-0030109,0030112, KIR3DL3*00302-00304,00401,0040201-0040204,00403,005, 0060101-0060103, KIR3DL3*00602,00603,0070101-0070104,00801,00802, 0090101-0090107, KIR3DL3*00902-00906,01001-01004,01101-01105,012,01301-01309, KIR3DL3*01401,0140201-0140206,01403-01414,01501-01503, KIR3DL3*01601,01602,01701,01702,01801,01802,019,020,02101, KIR3DL3*02102,022,023,02601,02602,02801,02802,030,032-034, KIR3DL3*036-039,042-047,04801,04802,050-055,057,059-079, KIR3DL3*080N,081-083,085-106,10701,10801,10802,1090101, KIR3DL3*1100101,111-115
3DS1 [03]	Absent
2DP1 [03]	Present KIR2DP1*00101,0010201-0010203,00103,0020101-0020110, 00202-00204, KIR2DP1*0030101,0030102,004,006-008,010,013,015-022,024
3DP1 [A, 03]	Present KIR3DP1*0030101-0030103,0030201-0030217,00303,0030401, 0030402, KIR3DP1*00305,0030601,0030602,00307-00312,005, 0060101-0060104, KIR3DP1*00602,0060301,0060302,00604,00605,008,0100101, KIR3DP1*0100102,01002-01005,013,0140101-0140103, 0150101-0150103, KIR3DP1*01502,016-026,0270101,0270102,0280101,0280102, KIR3DP1*029-031,0320101-0320103,033-052 KIR interpretation based on IPD-KIR database version 2.12.0
Comment: [03]	This test was performed using Polymerase Chain Reaction (PCR) and Sequence Specific Oligonucleotide Probes (SSOP) (Luminex) technique. Sequence Based Typing (SBT) may be used as a supplemental method when necessary. If you have questions, please call HLA customer service at 1-800-533-1037 or email at HLACS@Labcorp.com.

Date Collected: **12/21/2024**

Antinuclear Ab 9 by Multiplex

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anti-DNA (DS) Ab Qn [02]	1		IU/mL	0-9
			Negative <5	
			Equivocal 5 - 9	
			Positive >9	
RNP Antibodies [02]	<0.2		AI	0.0-0.9
Smith Antibodies [02]	<0.2		AI	0.0-0.9
Antiscleroderma-70 Antibodies [02]	<0.2		AI	0.0-0.9
Sjogren's Anti-SS-A [02]	<0.2		AI	0.0-0.9
Sjogren's Anti-SS-B [02]	<0.2		AI	0.0-0.9
Antichromatin Antibodies [02]	<0.2		AI	0.0-0.9
Anti-Jo-1 [02]	<0.2		AI	0.0-0.9
Anti-Centromere B Antibodies [02]	<0.2		AI	0.0-0.9

See below: [02]

Autoantibody	Disease Association	
	Condition	Frequency
Antinuclear Antibody, Direct (ANA-D)	SLE, mixed connective tissue diseases	
dsDNA	SLE	40 - 60%
Chromatin	Drug induced SLE	90%
	SLE	48 - 97%
SSA (Ro)	SLE	25 - 35%
	Sjogren's Syndrome	40 - 70%
	Neonatal Lupus	100%
SSB (La)	SLE	10%
	Sjogren's Syndrome	30%
Sm (anti-Smith)	SLE	15 - 30%
RNP	Mixed Connective Tissue Disease	95%
(U1 nRNP, anti-ribonucleoprotein)	SLE	30 - 50%
	Polymyositis and/or Dermatomyositis	20%
Scl-70 (antiDNA topoisomerase)	Scleroderma (diffuse)	20 - 35%
	Crest	13%
Jo-1	Polymyositis and/or Dermatomyositis	20 - 40%
Centromere B	Scleroderma - Crest variant	80%

Date Collected: **12/21/2024**

HLA-DRB1 (HR) DRB345 (IR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
DRB1 [03]	DRB1*07:01:01:01			
DRB1 [03]	DRB1*15:02:01:02 The following alleles could not be ruled out: DRB1* 07:01:01:01/07:01:01:02/07:01:01:04/07:01:01:05 /07:01:01:06/07:01:01:07/07:01:01:08/07:01:01:09 /07:01:01:10/07:01:01:11/07:01:01:12/07:01:01:13 /07:01:01:14/07:01:01:15/07:01:01:16/07:01:01:17 /07:01:01:18/07:01:01:19/07:01:01:20/07:01:01:22 /07:01:01:23/07:01:01:24/07:01:01:25/07:01:01:26 /07:01:01:27/07:139 DRB1* 15:02:01:02/15:02:01:03/15:02:01:05/15:02:01:07 /15:02:01:08			
DRB3 [03]	DRB3*-			
DRB3 [03]	DRB3*-			
DRB4 [03]	DRB4*01:03:01			
DRB4 [03]	DRB4*- The following alleles could not be ruled out: DRB4* 01:03:01/01:134			
DRB5 [03]	DRB5*01:02:01			
DRB5 [03]	DRB5*- HLA allele interpretation for all loci based on IMGT/HLA database version 3.53.0 This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. HLA Lab CLIA ID Number 34D0954530			
HLA Methodology [03]	HLA results were obtained using "Next Generation Sequencing" (NGS). Supplemental procedures based on sequence based typing (SBT) and/or sequence specific oligonucleotide probes (SSOP) may be used as needed to obtain the required resolution. If you have questions, please call HLA customer service at 1-800-533-1037 or email at HLACS@Labcorp.com.			

Chromosome, Blood, Routine

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Specimen Type [04]	Comment: BLOOD			

Chromosome, Blood, Routine (Cont.)

Cells Counted [04]	20
Cells Analyzed [04]	20
Cells Karyotyped [04]	2
GTG Band Resolution Achieved [04]	500
Cytogenetic Result [04]	Comment: 46,XX
Interpretation [04]	Comment: NORMAL FEMALE KARYOTYPE Cytogenetic analysis of PHA stimulated cultures has revealed a FEMALE karyotype with an apparently normal GTG banding pattern in all cells observed. This result does not exclude the possibility of subtle rearrangements below the resolution of cytogenetics or congenital anomalies due to other etiologies. Technical Component-Processing performed at 1904 TW Alexander Dr, Research Triangle Park, NC 27709, Labcorp CLIA 34D1008914. Medical Director, Anjen Chenn, M.D., Ph.D. Technical Component-Partial chromosome analysis performed at LabCorp, CLIA 45D0674994. 7207 North Gessner Rd., Houston, TX 77040. Laboratory Director, Venkateswara R Potluri PhD. Technical Component- Partial chromosome analysis performed by LabCorp, CLIA 45D0674994, 18926 Barrington Grove Trace, Richmond, TX, 77407. Laboratory Director, Venkateswara R Potluri PhD.
Director Review: [04]	Comment: Anh Vu, PhD, FACMG
PDF	.

PAI-1 Gene Polymorphism

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
PAI-1 Locus 4G/5G Polymorphism [05]				
	Patient DNA was evaluated for the PAI-1 4G/5G promoter polymorphism, which is a single base pair guanine (4G/5G) deletion/insertion polymorphism, using polymerase chain reaction (PCR) technology and restriction fragment length polymorphism (RFLP).			
Results [05]	4G/5G			
	Heterozygous for the 4G/5G deletion-insertion allele.			
Interpretation [05]				
	This individual has one copy of the 4G allele and one copy of the 5G allele, also known as the 4G/5G genotype of the plasminogen activator inhibitor type 1 (PAI-1) gene. The 4G/5G genotype is associated with the intermediate PAI-1 activity and antigen levels compared to those individuals that have either the 4G/4G genotype with the highest PAI levels or 5G/5G genotype with the lowest PAI levels.			

Date Collected: **12/21/2024**

PAI-1 Gene Polymorphism (Cont.)

Elevated PAI-1 levels are associated with an increased risk of coronary artery disease, venous thromboembolic disease and possibly complications of pregnancy such as recurrent abortion.

Comments [05]

Simultaneous Risks: If a patient possesses two or more congenital or acquired risk factors, the risk of disease may rise to more than the sum of the risk ratios for the individual risk factors. For instance, a combination of the 4G/4G genotype and the insulin resistance syndrome may confer an increase in cardiovascular disease risk over that conferred by the presence of an isolated PAI-1 4G/4G polymorphism.

Recommendations for Genetic Counseling: The PAI-1 4G allele is an inherited characteristic. If the polymorphism is present in a heterozygous or homozygous fashion, we recommend that the patient and their family consider genetic counseling to obtain additional information on inheritance and to identify other family members at risk.

Testing Characteristics: Genetic testing by PCR provides exceptionally high sensitivity and specificity. Incorrect genotyping results can be caused by rare polymorphisms in primer binding sites and to misidentification of specimens by collectors or laboratory personnel. This assay analyzes only the PAI 4G/5G locus and does not measure genetic abnormalities elsewhere in the genome.

This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the Food and Drug Administration.

References:
Barcellona D. Thromb Haemost. 2003;90:1061.; Dossenbach-Glaninger. Clin Chem. 2003;49:1081.; Kohler et al. NEJM. 2000;342:1792.; Margaglione M et al. Arterioscl Thromb and Vasc Bio. 1998;18:152.

Antiphosphatidylserine IgG/M/A

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Antiphosphatidylserine IgM [01]	17		Units	0-30
Antiphosphatidylserine IgA [01]	<1		APS Units	0-19
Antiphosphatidylserine IgG [01]	9		Units	0-30

Anticardiolip Ab, IgA/G/M, Qn

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anticardiolipin Ab,IgG,Qn [02]	<9		GPL U/mL	0-14
		Negative:	<15	
		Indeterminate:	15 - 20	
		Low-Med Positive:	>20 - 80	
		High Positive:	>80	

Date Collected: **12/21/2024**

Anticardiolip Ab, IgA/G/M, Qn (Cont.)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anticardiolipin Ab,IgM,Qn [02]	<9		MPL U/mL	0-12
		Negative: <13 Indeterminate: 13 - 20 Low-Med Positive: >20 - 80 High Positive: >80		
Anticardiolipin Ab,IgA,Qn [02]	<9		APL U/mL	0-11
		Negative: <12 Indeterminate: 12 - 20 Low-Med Positive: >20 - 80 High Positive: >80		

Beta-2 Glycoprotein I Ab,G,A,M

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Beta-2 Glycoprotein I Ab, IgG [01]	<9		GPI IgG units	0-20
Please Note: [01]	The reference interval reflects a 3SD or 99th percentile interval, which is thought to represent a potentially clinically significant result in accordance with the International Consensus Statement on the classification criteria for definitive antiphospholipid syndrome (APS). J Thromb Haem 2006;4:295-306.			
Beta-2 Glycoprotein I Ab, IgA [01]	<9		GPI IgA units	0-25
Please Note: [01]	The reference interval reflects a 3SD or 99th percentile interval, which is thought to represent a potentially clinically significant result in accordance with the International Consensus Statement on the classification criteria for definitive antiphospholipid syndrome (APS). J Thromb Haem 2006;4:295-306.			
Beta-2 Glycoprotein I Ab, IgM [01]	<9		GPI IgM units	0-32
Please Note: [01]	The reference interval reflects a 3SD or 99th percentile interval, which is thought to represent a potentially clinically significant result in accordance with the International Consensus Statement on the classification criteria for definitive antiphospholipid syndrome (APS). J Thromb Haem 2006;4:295-306.			

HLA DQA1 (IR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
DQA1 [03]		DQA1*01:EWDPY		
DQA1 [03]		DQA1*02:EWDPZ		

HLA DQB1 (HR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA DQB Sequencing [03]		DQB1*02:02:01:01		
HLA DQB Sequencing [03]		DQB1*06:01:01:01		

Date Collected: **12/21/2024**

HLA DQB1 (HR) (Cont.)

```
The following alleles could not be ruled out:
DQB1*  02:02:01:01/02:02:01:04/02:02:01:06/02:02:01:07
       /02:02:01:09/02:02:01:10/02:02:01:13/02:02:01:14
       /02:02:01:15/02:02:01:16/02:02:01:17/02:02:06:02
       /02:02:23/02:97/02:156
DQB1*  06:01:01:01/06:01:01:06/06:472
```

HLA-A (IR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA-A [03]	A*24:02:01G			
HLA-A [03]	A*30:01:01G			

HLA-B (IR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA-B [03]	B*13:02:01G			
HLA-B [03]	B*52:01:01G			

HLA-C (HR)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA-C [03]	C*06:02:01:01			
HLA-C [03]	C*12:02:02:01 The following alleles could not be ruled out: C* 12:02:02:01/12:02:02:02/12:02:02:10 C* 06:02:01:01/06:02:01:10/06:02:01:13/06:02:01:58			

HLA Class I Antibody HD

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA Ab HD 1 [03]	7 MFI Range Strong >=5000: None MFI Range Intermediate 3000-4999: None MFI Range Weak 1000-2999: A80(1661), B67(1064), Cw1(1141)	Low Positive < 30 Medium Positive 30 - 70 High Positive > 70	% CPRA	
Comment: [03]	This test was performed using solid phase (Luminex) testing. If you have questions, please call HLA customer service at 1-800-533-1037 or email at HLACS@Labcorp.com.			

Date Collected: **12/21/2024**

HLA Class II Antibody HD

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
HLA Ab HD 2 [03]	52		% CPRA	
			Low Positive < 30	
			Medium Positive 30 - 70	
			High Positive > 70	
	MFI Range Strong >=5000: None MFI Range Intermediate 3000-4999: None MFI Range Weak 1000-2999: DR1(2888), DR10(1551), DR12(1325), DRB3*02:02(1458)			

Anti-Mullerian Hormone (AMH)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anti-Mullerian Hormone (AMH) [06]	1.58	0.958 03/19/2024	ng/mL	
	For assays employing antibodies, the possibility exists for interference by heterophile antibodies in the samples.1 1.Kricka L. Interferences in Immunoassays - still a threat. Clin. Chem. 2000; 46: 1037-1038. This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the Food and Drug Administration. Reference Range: Females 41 - 46y: 0.26 - 5.81 Median 0.58 AMH concentrations of >= 1.06 ng/mL is correlated with a better response to ovarian stimulation, produced more retrievable oocytes and higher odds of live birth according to Gleicher et al. Fertility and Sterility. 2010: 94:2824-2827. The current AMH test method correlates with the study method with a slope of 0.94. Females at risk of ovarian hyperstimulation syndrome or polycystic ovarian syndrome (PCOS) may exhibit elevated serum AMH concentrations. AMH levels from PCOS patients may be 2 to 5 fold higher than age-appropriate reference interval values. Granulosa cell tumors of the ovary may secrete AMH along with other tumor markers. Elevated AMH is not specific for malignancy, and the assay should not be used exclusively to diagnose or exclude an AMH-secreting ovarian tumor.			

Factor V Leiden Mutation

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Factor V Leiden [07]	Result: c.1601G>A (p.Arg534Gln) - Not Detected This result is not associated with an increased risk for venous thromboembolism. See Additional Clinical Information and Comments.			
Comment [07]				

Date Collected: **12/21/2024**

Factor V Leiden Mutation (Cont.)

Additional Clinical Information:
Venous thromboembolism is a multifactorial disease influenced by genetic, environmental, and circumstantial risk factors. The c.1601G>A (p. Arg534Gln) variant in the F5 gene, commonly referred to as Factor V Leiden, is a genetic risk factor for venous thromboembolism. Heterozygous carriers of this variant have a 6- to 8-fold increased risk for venous thromboembolism. Individuals homozygous for this variant (ie, with a copy of the variant on each chromosome) have an approximately 80-fold increased risk for venous thromboembolism. Individuals who carry both a c.*97G>A variant in the F2 gene and Factor V Leiden have an approximately 20-fold increased risk for venous thromboembolism. Risks are likely to be even higher in more complex genotype combinations involving the F2 c.*97G>A variant and Factor V Leiden (PMID: 33674767). Additional risk factors include but are not limited to: deficiency of protein C, protein S, or antithrombin III, age, male sex, personal or family history of deep vein thromboembolism, smoking, surgery, prolonged immobilization, malignant neoplasm, tamoxifen treatment, raloxifene treatment, oral contraceptive use, hormone replacement therapy, and pregnancy. Management of thrombotic risk and thrombotic events should follow established guidelines and fit the clinical circumstance. This result cannot predict the occurrence or recurrence of a thrombotic event.
Comment:
Genetic counseling is recommended to discuss the potential clinical implications of positive results, as well as recommendations for testing family members.
Genetic Coordinators are available for health care providers to discuss results at 1-800-345-GENE (4363).
Test Details:
Variant Analyzed: c.1601G>A (p. Arg534Gln), referred to as Factor V Leiden
Methods/Limitations:
DNA analysis of the F5 gene (NM_000130.5) was performed by PCR amplification followed by restriction enzyme analysis. The diagnostic sensitivity is >99%. Results must be combined with clinical information for the most accurate interpretation. Molecular-based testing is highly accurate, but as in any laboratory test, diagnostic errors may occur. False positive or false negative results may occur for reasons that include genetic variants, blood transfusions, bone marrow transplantation, somatic or tissue-specific mosaicism, mislabeled samples, or erroneous representation of family relationships.
This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.
References:
Bhatt S, Taylor AK, Lozano R, Grody WW, Griffin JH; ACMG Professional Practice and Guidelines Committee. Addendum: American College of Medical Genetics consensus statement on factor V Leiden mutation testing. Genet Med. 2021 Mar 5. doi: 10.1038/s41436-021-01108-x. PMID: 33674767.
Kujovich JL. Factor V Leiden Thrombophilia. 1999 May 14 (Updated 2018 Jan 4). In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews(R) (Internet). Seattle (WA): University of Washington, Seattle; 1993-2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK1368/
Zhang S, Taylor AK, Huang X, Luo B, Spector EB, Fang P, Richards CS;

Date Collected: **12/21/2024**

Factor V Leiden Mutation (Cont.)

ACMG Laboratory Quality Assurance Committee. Venous thromboembolism laboratory testing (factor V Leiden and factor II c.*97G>A), 2018 update: a technical standard of the American College of Medical Genetics and Genomics (ACMG). Genet Med. 2018 Dec;20(12):1489-1498. doi: 10.1038/s41436-018-0322-z. Epub 2018 Oct 5. PMID: 30297698.

Reviewed By: 07

Technical Component performed at Labcorp RTP
Professional Component performed by:
Laboratory Corporation of America Holdings
Joseph B. Kearney, Ph.D., FACMG
Director, Molecular Genetics
621 Westwood Dr
Garner NC 27529

Factor II, DNA Analysis

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Factor II, DNA Analysis 07	Result: c.*97G>A - Not Detected This result is not associated with an increased risk for venous thromboembolism. See Additional Clinical Information and Comments.			

Additional Information: 07

Additional Clinical Information:
Venous thromboembolism is a multifactorial disease influenced by genetic, environmental, and circumstantial risk factors. The c.*97G>A variant in the F2 gene is a genetic risk factor for venous thromboembolism. Heterozygous carriers have a 2- to 4-fold increased risk for venous thromboembolism. Homozygotes for the c.*97G>A variant are rare. The annual risk of VTE in homozygotes has been reported to be 1.1%/year. Individuals who carry both a c.*97G>A variant in the F2 gene and a c.1601G>A (p. Arg534Gln) variant in the F5 gene (commonly referred to as Factor V Leiden) have an approximately 20-fold increased risk for venous thromboembolism. Risks are likely to be even higher in more complex genotype combinations involving the F2 c.*97G>A variant and Factor V Leiden (PMID: 33674767). Additional risk factors include but are not limited to: deficiency of protein C, protein S, or antithrombin III, age, male sex, personal or family history of deep vein thromboembolism, smoking, surgery, prolonged immobilization, malignant neoplasm, tamoxifen treatment, raloxifene treatment, oral contraceptive use, hormone replacement therapy, and pregnancy. Management of thrombotic risk and thrombotic events should follow established guidelines and fit the clinical circumstance. This result cannot predict the occurrence or recurrence of a thrombotic event.
Comments:
Genetic counseling is recommended to discuss the potential clinical implications of positive results, as well as recommendations for testing family members.
Genetic Coordinators are available for health care providers to discuss results at 1-800-345-GENE (4363).
Test Details:
Variant analyzed: c.*97G>A, previously referred to as G20210A
Methods/Limitations:
DNA analysis of the F2 gene (NM_000506.5) was performed by PCR

Factor II, DNA Analysis (Cont.)

amplification followed by restriction enzyme analysis. The diagnostic sensitivity is >99%. Results must be combined with clinical information for the most accurate interpretation. Molecular-based testing is highly accurate, but as in any laboratory test, diagnostic errors may occur. False positive or false negative results may occur for reasons that include genetic variants, blood transfusions, bone marrow transplantation, somatic or tissue-specific mosaicism, mislabeled samples, or erroneous representation of family relationships.
This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.
References:
Bhatt S, Taylor AK, Lozano R, Grody WW, Griffin JH; ACMG Professional Practice and Guidelines Committee. Addendum: American College of Medical Genetics consensus statement on factor V Leiden mutation testing. Genet Med. 2021 Mar 5. doi: 10.1038/s41436-021-01108-x. PMID: 33674767.
Kujovich JL. Prothrombin Thrombophilia. 2006 Jul 25 [Updated 2021 Feb 4]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews(R) [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK1148/
Zhang S, Taylor AK, Huang X, Luo B, Spector EB, Fang P, Richards CS; ACMG Laboratory Quality Assurance Committee. Venous thromboembolism laboratory testing (factor V Leiden and factor II c.*97G>A), 2018 update: a technical standard of the American College of Medical Genetics and Genomics (ACMG). Genet Med. 2018 Dec;20(12):1489-1498. doi: 10.1038/s41436-018-0322-z. Epub 2018 Oct 5. PMID: 30297698.

Reviewed By: [07]
Yanjun Jiang, PhD FACMG

Complement C4, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Complement C4, Serum [02]	13		mg/dL	12-38

Folate (Folic Acid), Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Folate (Folic Acid), Serum [02]	>20.0		ng/mL	>3.0

Note: [02]
A serum folate concentration of less than 3.1 ng/mL is considered to represent clinical deficiency.

TSH

Test	Current Result and Flag	Previous Result and Date		Units	Reference Interval
TSH [02]	1.480	2.210	03/19/2024	uIU/mL	0.450-4.500

Complement C3, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Complement C3, Serum [02]	97		mg/dL	82-167

Date Collected: **12/21/2024**

Rheumatoid Factor (RF)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Rheumatoid Factor (RF) [02]	<10.0		IU/mL	<14.0

Thyrotropin Receptor Ab, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Thyrotropin Receptor Ab, Serum [01]	<1.10		IU/L	0.00-1.75

Vitamin D, 25-Hydroxy

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Vitamin D, 25-Hydroxy [02]	56.2		ng/mL	30.0-100.0

Vitamin D deficiency has been defined by the Institute of Medicine and an Endocrine Society practice guideline as a level of serum 25-OH vitamin D less than 20 ng/mL (1,2). The Endocrine Society went on to further define vitamin D insufficiency as a level between 21 and 29 ng/mL (2).

1. IOM (Institute of Medicine). 2010. Dietary reference intakes for calcium and D. Washington DC: The National Academies Press.
2. Holick MF, Binkley NC, Bischoff-Ferrari HA, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. JCEM. 2011 Jul; 96(7):1911-30.

Anti-CCP Ab, IgG/IgA

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anti-CCP Ab, IgG/IgA [02]	8		units	0-19

Negative	<20
Weak positive	20 - 39
Moderate positive	40 - 59
Strong positive	>59

Homocyst(e)ine

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Homocyst(e)ine [02]	4.4		umol/L	0.0-14.5

Immunoglobulin E, Total

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Immunoglobulin E, Total [02]	34		IU/mL	6-495

Thyroxine (T4)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Thyroxine (T4) [02]	6.4		ug/dL	4.5-12.0

Triiodothyronine (T3)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▼ **Triiodothyronine (T3)** [02]	**66** **Low**		ng/dL	71-180

Date Collected: **12/21/2024**

Thyroglobulin Antibody

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Thyroglobulin Antibody [02]	<1.0		IU/mL	0.0-0.9

Thyroglobulin Antibody measured by Beckman Coulter Methodology
It should be noted that the presence of thyroglobulin antibodies may not be pathogenic nor diagnostic, especially at very low levels. The assay manufacturer has found that four percent of individuals without evidence of thyroid disease or autoimmunity will have positive TgAb levels up to 4 IU/mL.

Immunoglobulin G, Qn, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Immunoglobulin G, Qn, Serum [02]	1342		mg/dL	586-1602

Immunoglobulin A, Qn, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Immunoglobulin A, Qn, Serum [02]	199		mg/dL	87-352

Immunoglobulin M, Qn, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Immunoglobulin M, Qn, Serum [02]	85		mg/dL	26-217

Thyroid Peroxidase (TPO) Ab

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Thyroid Peroxidase (TPO) Ab [02]	<9		IU/mL	0-34

Disclaimer
The Previous Result is listed for the most recent test performed by Labcorp in the past 5 years where there is sufficient patient demographic data to match the result to the patient. Results from certain tests are excluded from the Previous Result display.

Icon Legend
▲ Out of Reference Range ■ Critical or Alert

Comments
A: Results for this test are for research purposes only by the assay's manufacturer. The performance characteristics of this product have not been established. Results should not be used as a diagnostic procedure without confirmation of the diagnosis by another medically established diagnostic product or procedure.

Performing Labs
01: BN - Labcorp Burlington, 1447 York Court, Burlington, NC 27215-3361 Dir: Sanjai Nagendra, MD
02: RN - Labcorp Raritan, 69 First Avenue, Raritan, NJ 08869-1800 Dir: Liza Jodry, MD
03: 2Q - Labcorp Burlington DNA, 1440 York Court, Burlington, NC 27215-3361 Dir: Ruth Koester, PhD
04: YU - Labcorp RTP, 1904 TW Alexander Drive Ste C, RTP, NC 27709-0153 Dir: Anjen Chenn, MDPhD
05: UY - Esoterix Inc, 8490 Upland Drive Ste 100, Englewood, CO 80112-7116 Dir: Brian F. Poirier, MD
06: ES - Esoterix Inc, 4301 Lost Hills Road, Calabasas Hills, CA 91301-5358 Dir: Brian Poirier, MD
07: TG - Labcorp RTP, 1912 TW Alexander Drive, RTP, NC 27709-0150 Dir: Anjen Chenn, MDPhD
For inquiries, the physician may contact Branch: 800-631-5250 Lab: 800-631-5250

Patient Details
Song, Julee
600 12TH ST APT 803, PALISADES PARK, NJ, 07650

Phone: **551-804-6028**
Date of Birth: **05/18/1982**
Age: **42**
Sex: **Female**
Patient ID: **JS05181982**
Alternate Patient ID: **JS05181982**

Physician Details
M IRANI
PREGIMMUNE CORP DBA PREGMUNE
344 GROVE ST PMB 60570, JERSEY CITY, NJ, 073025923

Phone: **201-409-4100**
Account Number: **29088990**
Physician ID:
NPI: **1154602670**

Specimen Details
Specimen ID: **356-436-8481-0**
Control ID: **10606317675**
Alternate Control Number: **10606317675**
Date Collected: **12/21/2024 1109 Local**
Date Received: **12/21/2024 0000 ET**
Date Entered: **12/21/2024 1231 ET**
Date Reported: **01/15/2025 1005 ET**

200 Forest Street, 2nd Floor, Suite B
Marlborough, MA 01752 USA
tel: 800.667.8893 USA only
fax: 781.935.3068
CLIA#: 22D0884531

Laboratory Report

ReproSource® Fertility Diagnostics

Patient: Song, Julee
Gender: F Age: 42 Date of Birth: 05/18/1982
Specimen: 00577576 Chart #: Not Provided
Reported: 12/30/2024
Received: 12/27/2024 Time: 10:10
Collected: 12/26/2024 Time: 07:15

Physician: Mohamad Irani MD
Telephone: 1-847-662-1818 Fax: 1-847-662-3001
Address: Pregmune at Advanced Fertility Center of Chicago
30 Tower Ct, Ste F
Gurnee, IL 60031

TEST	UNITS	NORMAL RANGE	RESULT	COMMENT
NK Activity Assay				
Cell Viability, Whole Blood	%	>=80.0%	93.9	**Acceptable**
Cell Viability, Lymphocyte	%	>=80.0%	97.8	**Acceptable**
E:T 50:1 Native State	%	12.1 - 37.4	32.0	**Native Killing >10%**
E:T 25:1 Native State	%	6.6 - 30.6	17.1	
E:T 12.5:1 Native State	%	3.4 - 23.5	11.9	
NOTE: When E:T 50:1 Native killing is below 5%, less reliable dilution curves are observed.				
E:T 25:1+IL-2 stimulation	%	10.8 - 33.2	18.4	
% increased			7.2	
E:T 25:1+Intralipid	%	7.0 - 34.5	16.2	
% reduced			5.3	
E:T 25:1+12.5mg/dl IgG	%	2.7 - 29.2	6.0	
% reduced			64.8	**>15% suppression**
E:T 25:1+6.25mg/dl IgG	%	4.9 - 28.3	10.7	
% reduced			37.4	**>15% suppression**

NATURAL KILLER (NK) ACTIVITY (Explanation of Results):
The NK Activity test assesses the activity or potency of NK cells by determining their ability to kill K562 cells in vitro and is used by specialists in autoimmunity, transplantation, and oncology. Certain specialists in reproductive immunology consider the K562 cell to be a surrogate for the developing trophoblast in pregnancy. The reference ranges above were determined using the 95% confidence interval from healthy women of reproductive age with no known fertility issues.

Certain reproductive immunologists have the following interpretations of NK Activity testing in women with high risk pregnancies/recurrent pregnancy loss:

TEST	UNITS	NORMAL RANGE	RESULT	COMMENT

NATIVE KILLING: Normal= <8.5%; Borderline= 8.5 to 10%; Abnormal= >10%

STIMULATION: Killing increased by > 15% (25:1 ratio used)
calculation: (%Stimulated-%Native)/%Native

SUPPRESSION: Killing Reduced by >15% (25:1 ratio used)
calculation: (%Native-%Suppressed)/%Native

This test was developed and its analytical performance characteristics have been determined by ReproSource Fertility Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.

T-RIP				
CD3+ (Total T cells)	%	67.4 - 86.6	63.9	**Low**
CD3+/56+ (NK T cells)	%	3.0 - 13.3	9.2	Normal
CD3-/56+ (Total NK cells)	%	6.3 - 20.5	21.1	**High**
CD3-/56+/16+ (16+ NK cells)	%	5.7 - 18.9	17.8	Normal
CD3-/56+/16-	%	0.3 - 2.1	3.3	**High**
CD3+/4+/8-/56+	%	0.2 - 1.5	4.1	**High**
CD3+/4-/8+/56+	%	2.0 - 9.0	4.3	Normal
CD3+/4-/8-/56+	%	0.1 - 3.8	0.2	Normal
CD3+/8+ (Cytotox/supp T cells)	%	17.5 - 36.2	15.9	**Low**
CD3+/4+(T Helper/Inducer cell)	%	30.5 - 55.1	43.2	Normal
CD3+/4+/25+	%	1.8 - 4.8	6.3	**High**
CD3+/25+(Activated IL2R Tcell)	%	4.3 - 10.3	7.8	Normal
CD3+/28+	%	54.4 - 83.3	55.1	Normal
CD19+ (Total B cells)*	%	2.6-20.9	17.2	Normal
CD19+/5+ (Cytotoxic B cells)	%	0.4 - 4.5	3.8	Normal
CD3+/HLA-DR+(Activated T cell)	%	2.4 - 10.3	7.7	Normal

For the cell types listed above, the results are expressed as a percentage of total lymphocytes.

This test was developed and its analytical performance characteristics have been determined by ReproSource Fertility Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used

TEST	UNITS	NORMAL RANGE	RESULT	COMMENT
for clinical purposes.				
CD3+/4+/25h/127lo/FoxP3+(TReg)				
	%	1.6 - 7.5	4.2	Normal

Results for "T-Reg" or T-Regulatory (FoxP3) cells are expressed as the percentage of CD3+/CD4+ (T Helper) cells which are CD25high/CD127low/FoxP3+.

EXPLANATION OF RESULTS:
White blood cells (WBCs) or leukocytes are the cells in the immune system which defend the body against infectious disease and "non-self" material. Lymphocytes represent the fraction of white blood cells comprised primarily of T cells, B cells, and NK cells but not, for example, granulocytes or monocytes/macrophages. In this assay, total lymphocytes are technically defined by flow cytometry as cells which exhibit high expression of the WBC surface marker CD45 (CD45 "bright") but which also demonstrate "low side scatter" that distinguish them from other WBCs.

Lymphocytes are further categorized by use of additional cell markers. Cell surface markers are described using the technical Cluster of Differentiation ("CD") nomenclature. Cell markers are then followed in parentheses by a commonly used name for that cell type in the medical literature. For example, CD3+/CD4+ (T Helper) refers to cells which express CD3 and CD4 on the cell surface and are commonly referred to as "T Helper" cells.

IM-Xpress				
Cell Viability, Whole Blood	%	>=80.0%	93.9	**Acceptable**
Cell Viability, Lymphocyte	%	>=80.0%	97.8	**Acceptable**
CD3+/8+/IFNg	%	14.3 - 60.4	47.4	Normal
CD3+/8+/TNF-a	%	15.9 - 66.1	48.5	Normal
CD3+/8+/IL-10	%	0.6 - 3.8	2.1	Normal
CD3+/8+/IL-4	%	0.9 - 7.6	3.8	Normal
CD3+/8-/IL-4	%	1.3 - 7.3	1.5	Normal
CD3+/56+/IFNg	%	25.0 - 69.6	38.2	Normal
CD3+/56+/TNF-a	%	37.0 - 86.4	79.2	Normal
CD3+/56+/IL-10	%	1.7 - 10.4	1.1	**Low**
CD3+/56+/IL-4	%	2.7 - 13.1	3.7	Normal
CD3-/56+/IFNg	%	21.5 - 92.6	26.6	Normal
CD3-/56+/TNF-a	%	15.3 - 65.4	40.6	Normal
CD3-/56+/IL-10	%	1.4 - 5.0	1.4	Normal
CD3-/56+/IL-4	%	1.2 - 4.6	0.6	**Low**

TEST	UNITS	NORMAL RANGE	RESULT	COMMENT
TNF-a:IL-10 (CD3+/ "CD4+")	Ratio	14.1 - 39.4	40.6	**High**
IFNg:IL-10 (CD3+/"CD4+")	Ratio	3.7 - 17.6	9.1	Normal
Individual Values:				
(CD3+/"CD4+") / TNF-a	%	44.4 - 80.0	77.6	Normal
(CD3+/"CD4+") / IFNg	%	12.2 - 32.2	17.3	Normal
(CD3+/"CD4+") / IL-10	%	1.6 - 4.7	1.9	Normal

`%` represents percentage of listed lymphocyte cell subset expressing the listed intracellular cytokine. Example: a result (%) for `CD3+/8+/IFNg` refers to the % of CD3+/8+ cells which express IFN-g.

INTERPRETATION:
The reference range values, estimated to contain 95% of the reference population, were derived in healthy female women reported to be non-pregnant with no known fertility issues.

TEST DESCRIPTION:
The TH1:TH2 intracellular cytokine ratio characterizes the type of immunological responsiveness that a patient is likely to exhibit. A TH1 immune response is mediated by cellular components of the immune system such as natural killer cell (CD3-/CD56+ lymphocytes) or cytotoxic T cells (CD3+/CD8+ lymphocytes) and is promoted by the secretion of cytokines such as tumor necrosis factor alpha (TNFa) and interferon gamma(IFNg) . A TH2 response involves other mechanisms such as antibody production and is promoted by cytokines such as interleukin 10 (IL-10).
The TH1:TH2 test measures the intracellular production of the cytokines TNFa, IFNg, and IL-10 within T helper lymphocytes (CD3+/CD4+ cells) stimulated in vitro and then calculates two ratios: TNFa/IL-10 and IFNg/IL-10.

This test was developed and its analytical performance characteristics have been determined by ReproSource Fertility Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.

Intracellular IL17+ cell subsets

CD3+/8-/IL-17A (TH17)	%	0.17 - 2.39	1.20	Normal
CD3+/8+/IL17A	%	0.49 - 1.82	0.90	Normal
CD3-/56+/IL17A (NK/IL17A)	%	0.35 - 2.26	1.80	Normal
CD3+/56+/IL17A (NKT/IL17A)	%	0.90 - 3.95	2.30	Normal

This test was developed and its analytical performance characteristics have been determined by ReproSource Fertility Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used

TEST	UNITS	NORMAL RANGE	RESULT	COMMENT
	for clinical purposes.			