Dr Gavin Sacks Reproductive Immunology

FLOW CYTOMETRY FOR ACTIVATED NATURAL KILLER CELLS (NK)

Sample ID: 25-2180044
Name: Shae AITKEN
D.O.B. 24/06/1983
Requesting Doctor SACKS
Date of COLLECTION: Monday, 9 June 2025
Sample Type: Peripheral blood

Lymphocytes	**2.2**	x 10 ^9 /L	(1.5-4.0)
% Total NK cells (CD3-56+)	**8.8**	% of lymphocytes	(normal < 12.0)
Activated (CD69+) CD56 'Dim' NKs	**8.8**	x 10 ^6 /L	(normal < 12.0)

Recommended clinical interpretation: **NORMAL**

Total NK >18% and CD69 concentration >12 : HIGH
Total NK >12% and/or CD69 concentration >12 : BORDERLINE
Total NK <12% and CD69 concentration <12 : NORMAL

Notes: Nil

This test was created by Dr Sacks, and the test and clinical interpretation are protected by patent (application number 2022228160).

The test is provided by IVFAustralia under the supervision of Dr Sacks, and is currently not NATA accredited. It is subject to internal Quality Control and Governance.

The reference ranges were derived and described for clinical use in the following publications:

King K et al. Hum Reprod 2010;25(1):52-8.
Sacks GP et al. Am J Reprod Immunol. 2012 May;67(5):434-42.
Templer S & Sacks G. J Aller Immunol 2017; 1:001
Templer S & Sacks G. Hum Fertil (Camb). 2016 Sep;19(3):166-72.
Krigstein M & Sacks G. J Obstet Gynaecol 2012;32:518-9.
Ehrlich R et al. Fertility & Reproduction 2019;1: 154-160.
Sacks G & Zhang J. Am J Reprod Immunol. 2022 Nov;88(5):e13616. doi:10 1111/aji.13616.

While those and other studies have demonstrated an association between an increased test result and difficulties in reproduction such as miscarriage or infertility, a causal relationship has not been established.

Results may be affected by certain conditions including acute stress, exercise, pregnancy, infection, hormonal medication, IVF stimulation, and herbal medication.

For any queries please contact Dr Gavin Sacks (gavin.sacks@ivf.com.au).

RATHNAYAKE, GEETHA

For Surgery Use: Urgent ☐ Ring Patient ☐ Make Appointment ☐ Note in Chart ☐ File ☐

Patient **AITKEN, SHAE**		UR No.	
Patient Address **5/10 ALEXANDRA PDE COTTON TREE QLD 4558**			
Sex F Age 41 years DOB 24/06/1983	Requested	09/06/2025	
Report For RATHNAYAKE, GEETHA	Collected	09/06/2025	12:45 PM
Ref. by/copy to RATHNAYAKE, GEETHA	Reported	18/06/2025	09:41 AM

MTHFR GENOTYPE ANALYSIS

SPECIMEN: Peripheral blood

REASON FOR REFERRAL: Repeated implantation failure

RESULTS:

C677T mutation: Heterozygous (single mutated allele detected)

A1298C mutation: NOT Detected

This patient is heterozygous for the MTHFR C677T mutation. Studies have shown that this mutation may result in intermediate enzyme activity, but is NOT associated with increase in plasma homocysteine levels or an increased risk of venous thrombosis.

METHOD:

The methylenetetrahydrofolate reductase gene (MTHFR, Ref. Sequence: NM_005957.4) was screened for the presence of C677T (also known as c.677C>T/c.665C>T) and A1298C (also known as c.1298A>C/c.1286A>C) mutations using real-time PCR analysis (Hanson et al. Clin Chem. 2001;661-666).

This separate collection confirms the previous MTHFR genetic results.

For enquiries consult Dr Peter Davidson or Dr Abhijit Kulkarni.

Pathology Report

RATHNAYAKE, GEETHA

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Pathology Report

FACTOR V LEIDEN AND PROTHROMBIN GENE MUTATION ANALYSIS

SPECIMEN: Peripheral blood
REASON FOR REFERRAL: Repeated implantation failure

RESULTS
FACTOR V LEIDEN MUTATION: NOT detected

COMMENT:
Factor V Leiden mutation G1691A (c.1691G>A) is an inherited abnormality of the factor V gene. Heterozygous mutation confers an 8 fold increased risk of venous thromboembolism. Pregnancy increases the risk to 30 fold, while oral contraceptives have an increased risk of around 35 fold. There is a 5 fold risk of recurrence of venous thromboembolism. Homozygous mutation confers an 80 to 100 fold increased risk.

RESULTS
PROTHROMBIN G20210A MUTATION: NOT detected

COMMENT:
The Prothrombin mutation G20210A (g.20210G>A) is an inherited abnormality of the factor II gene and is associated with a 3 to 4 fold increased risk of venous thromboembolism.

For enquiries consult Dr Peter Davidson or Dr Abhijit Kulkarni.

RATHNAYAKE, GEETHA

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Pathology Report

THROMBOTIC ASSAYS

Antithrombin III Activity	74	%	(80-120)
Protein S Assay (free)	52	%	(50-135)
Activated Protein C Resistance (F V Mutations)	2.65		(Greater than 2.09)

Comment:

Reduced antithrombin III level. Suggest repeat testing for confirmation. Acquired causes of antithrombin III deficiency include pre-eclampsia, disseminated intravascular coagulation, post operative states, heparin and oral contraceptive therapy.
Congenital antithrombin III deficiency with reduced levels to half normal are associated with a high risk of recurrent venous thrombosis often complicated by pulmonary embolism.

Medicare rebate is only applicable where:

A. The patient has a **personal** history of **venous** thromboembolism and this is stated on the request form.
B. A first degree relative has a **documented** proven thrombophilic defect.

Notes such as family history of DVT/PE without stating the documented defect are insufficient.
Please contact Coagulation on 07 3121 4957 to arrange appropriate billing if patient has a positive history.

RATHNAYAKE, GEETHA

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Pathology Report

LUPUS ANTICOAGULANT SCREEN

Prothrombin time	14	seconds	(8-14)
APTT	33	seconds	(22-35)

DILUTE RUSSELLS VIPER VENOM TEST

LA DRVVT Screen Ratio	0.9	(Less than 1.2)

Comment :
No lupus anticoagulant detected.

Assay Comment:
Lupus anticoagulant may not be detected by the DRVVT method in all patients with an antiphospholipid syndrome. False negative results may occur with weak antibodies. False positives may also occur in patients taking anticoagulants. Correlation with serologic anti-cardiolipin and anti-B2 glycoprotein tests is required in assessing antiphospholipid antibodies. If the patient is on an DOAC agent consider repeating the assay shortly before the daily dose is taken.

Methodology:
Assay for Lupus Anticoagulant performed using the Siemens LA Reagents on the Sysmex CN-6000 coagulation analyser.

RATHNAYAKE, GEETHA

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PHOSPHOLIPID ANTIBODIES

Cardiolipin IgG	Negative
Cardiolipin IgM	LOW POSITIVE

Anticardiolipin antibodies are associated with the antiphospholipid syndrome (APS). IgM antibodies are less specific for APS than IgG antibodies. Transiently positive results, often low titre, may be found in a range of inflammatory, infective and malignant disorders. Hence international guidelines recommend repeat testing after 12 weeks to confirm antibody persistence.
Anti-beta2 glycoprotein antibodies and a positive lupus anticoagulant test are associated with APS and are regarded as more specific than anticardiolipin antibodies for the antiphospholipid syndrome.

For enquiries, contact Dr Paul Campbell 07 3121 4444
Patients should contact their referring doctor in regard to this result.

RATHNAYAKE, GEETHA

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Pathology Report

CUMULATIVE SERUM THYROID FUNCTION TESTS

Date	14/10/22	08/11/22	09/06/25	
Time	09:55	06:46	12:45	
Lab No	70853121	71580791	59094018	
TSH	0.25	3.40		mIU/L (0.50-4.00)
free T4	15			pmol/L (10-20)
Thyroglobulin AbII			< 1.3	IU/mL (< 4.6)
Thy Peroxidase AbII			< 6.6	IU/mL (< 13.8)

These antibody levels are not suggestive of Thyroid inflammatory or rapidly progressing neoplasia. However 15% of Hashimoto's does not produce measurable antibodies. Prior autoimmune activity cannot be excluded.

Please note that as of 24/03/25, QML Pathology changed to a reformulated Atellica Thyroid Peroxidase Antibody (Thy Peroxidase AbII) assay with an updated reference interval. Values from the new assay are not directly comparable to the previous method, and differences in individual patient results may be observed. For further information, please contact a Chemical Pathologist on 07 3121 4444.

Results

CGB (KARYOTYPE BLOOD)

CYTOGENETICS REPORT

Accession no: 2500-8470

Clinical Notes: Repeated implantation failure
Specimen Type: Blood
Number cells analysed: 5
Number cells counted: N/A
Banding: G
G-Band Level: 550

ISCN 2024: 46,XX

Comments:
Female karyotype, 46,XX. No abnormality detected.

Test Information:
This test may not detect chromosomal rearrangements or gains/losses involving segments less than 5-10Mb in size. It may not detect low level mosaicism (present in <40% of blood cells) or mosaicism limited to non-blood tissues. Common benign variants are not reported, including heterochromatin variants and inversions with recurring breakpoints involving chr 2, 9, 10, or Y. Contact the laboratory for further information or if additional karyotype analysis is clinically indicated. This test has been performed by Virtus Genetics (1800 837 284; info@virtusgenetics.com.au).

Patient Details:

Patient Name:	Aitken Shae (Female)
Address:	5/10-12 ALEXANDRA PDE.,, COTTON TREE QLD 4558
DOB:	24/06/1983

Investigation:

Universal Service Identifier Text:	KARYOTYPE BLOOD
Collected Date:	09/06/2025 12:45 PM
Reported Date:	01/07/2025 02:57 PM

Other:

Laboratory:	shaiqldf
Laboratory Order Number:	25-2180042-CGB-0

Results

TFT (THYROID FUNCTION TEST)

THYROID FUNCTION TESTS (Serum)

Free T4	15 pmol/L	(12-22)
TSH	1.47 mIU/L	(0.27-4.20)

Testing performed on the Roche Cobas e immunoassay analysers (ECLIA).
Please note: Reference ranges have changed as from 18/06/2022.

Patient Details:

Patient Name: Aitken Shae (Female)
Address: 5/10-12 ALEXANDRA PDE.,, COTTON TREE QLD 4558
DOB: 24/06/1983

Investigation:

Universal Service Identifier Text: THYROID FUNCTION TEST
Collected Date: 09/06/2025 12:45 PM
Reported Date: 09/06/2025 02:50 PM

Other:

Laboratory: shaiqldf
Laboratory Order Number: 25-2180040-TFT-0