harmony®
PRENATAL TEST

Sonic Genetics
Clinipath Pathology

Harmony Test

DOB	31 May 1975 (43 Yrs)
Lab ID	428115982
Phone	0412345689
Address	Clinipath Pathology OSBORNE PARK WA 6017
Your Ref	SXG-NIPT
Ref by	A Sonic (S1777)
Requested	6 Mar 2018
Collection	31 May 2018, 07:00 am
Received	31 May 2018
Reported	05 Jun 2018, 11:51 am
Sample type	cfDNA from plasma
Fetal Fraction	9.8%
Gestation	10 weeks 2 days (at collection)
IVF Status	Non-IVF Pregnancy
No. of fetuses	1

Apollo Sonic S1777
14 Giffnock Avenue Z16
MACQUARIE PARK NSW 2113

Harmony® Prenatal Test Report

	CHROMOSOME	RESULT	RECOMMENDATION
✓	Trisomy 21 (T21)	Low Risk	Review results with patient
✓	Trisomy 18 (T18)	Low Risk	Review results with patient
✓	Trisomy 13 (T13)	Low Risk	Review results with patient
✓	22q11.2 Microdeletion	No evidence of a deletion	Review results with patient
M	Fetal Sex	Male	Review results with patient
✓	Sex Chromosome Aneuploidy (SCA)	Low Risk	Review results with patient

COMMENTS

The Harmony Prenatal Test is a screening test for the chromosomal abnormalities listed in the report above. This result should be considered in the context of all other clinical information regarding this pregnancy.
The negative predictive value (NPV) of each low risk result will vary with the patient's pre-test probability. For example, the theoretical post-test likelihood for each autosomal trisomy (13,18,21) would be <1/1000 in a patient with pre-test probability of 1/50, and <1/5000 in a patient with pre-test probability of 1/300. See www.sonicgenetics.com.au/harmonyppv for more information, and www.sonicgenetics.com.au/rfu for information on the new report format.

Test Description

The Harmony Prenatal Test measures the relative proportion of chromosomes to aid in the assessment of fetal trisomies 21, 18, and 13. Harmony performs a directed analysis of cell-free DNA (cfDNA) in maternal blood, and incorporates the fetal fraction of cfDNA in test results. Test results also incorporate maternal age (or egg donor age) and gestational age related probability based on information provided on the test requisition form. Assessment of less than 1% is defined as low risk and greater than or equal to 1% is defined as high risk. Note that the calculated probability score relates to the tested cfDNA, which is of placental origin. Analysis of cfDNA does not always correlate with fetal genotype. Not all aneuploid fetuses will have a high risk result, and some euploid fetuses will have a high risk result. The Harmony Prenatal Test is not a diagnostic test and results should be considered with other clinical criteria and communicated in a setting that includes appropriate counselling. Harmony has been validated in singleton and twin pregnancies of at least 10 weeks gestational age. Harmony is not validated for use in pregnancies with more than two fetuses, demised twin, mosaicism, partial chromosome aneuploidy, translocations, maternal aneuploidy, transplant, malignancy, or in women under the age of 18. Harmony does not detect neural tube defects. Twin results reflect the probability that the pregnancy involves at least one affected fetus.
Fetal Sex Test: quantifies the Y chromosome. A "female" result indicates absence of Y chromosome and a "male" result indicates presence of Y chromosome. It does not exclude sex chromosome aneuploidy. For twin pregnancies, a male result indicates one or two male fetuses.
Sex Chromosome Aneuploidy (SCA Panel)/Monosomy X: SCA Panel measures proportions of the X and Y chromosomes. Monosomy X quantifies the X chromosome and does not exclude other sex chromosome aneuploidies. Sex chromosome conditions (Monosomy X, XXY, XYY, XXX, XXYY) are reported at probabilities of 1% or greater. An XYY or XXYY result indicates two or more fetal Y chromosomes. SCA Panel and Monosomy X have only been validated in singleton pregnancies.
22q11.2 Test: 22q11.2 Test uses targeted analysis of chromosome cfDNA fragments from within a 3Mb region of 22q11.2 to determine the probability of a deletion. "High Probability of a deletion" indicates that the analysis detected a decrease of cfDNA fragments consistent with a deletion of the 22q11.2 region, which may be fetal, maternal or both. "Low probability of a deletion" indicates the analysis does not find an increased probability for a deletion in the 22q11.2 region. Not all fetuses with 22q11.2 deletions will be classified as high probability, and some fetuses without a 22q11.2 deletion will be classified as high probability. This test does not rule out the possibility of other clinically significant aneuploidy, single gene conditions, microdeletions or microduplications being present in the fetus. Women with a known 22q11.2 deletion are not eligible for this test. 22q11.2 test has only been validated in singleton pregnancies.

REFERENCES: Stokowski R et al. Prenatal Diagnosis 2015; 35:1-9; Data on file | Jones et al. Ultrasound in Obstetrics and Gynecology. 2019; 51(2):276-278; Schmid et al. Fetal Diagnosis and Therapy 2017, Nov. 8

Test performed by Sullivan Nicolaides Pty Ltd ABN 38 078 202 196, 24 Hurworth St, Bowen Hills QLD 4006 under the supervision of Dr James Harraway MB, ChB, FRCPA, DPhil - 1800 010 447

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Harmony Clinical Performance Data (Published Literature)

	Detection Rate	False Positive Rate
T21	99.3% (95% CI: 97.9-99.8%)	< 0.1% (95% CI: 0.02 - 0.08%)
T18	97.4% (95% CI: 93.4%-99.0%)	< 0.1% (95% CI: 0.01-0.05%)
T13	93.8% (95% CI: 79.9-98.3%)	< 0.1% (95% CI: 0.01-0.06%)
MX	94.3% (95% CI:87.2-97.5)	0.2% (95% CI: 0.1-0.7)
22q11.2	75.2% (95% CI: 67.1-81.8)	0.4% (95% CI: 0.2-0.9)

Limited numbers of 22q11.2 cases have been evaluated to date; estimates of sensitivity and specificity include simulated samples.

Detection and false positive (discordant result) rates are based on calculated probability cut-off of 1/100 (1%) and on singleton, non-egg donor pregnancies. Because these conditions are rare, limited numbers of aneuploidy twin and egg donor pregnancies have been evaluated. As Harmony is a screening test, negative and positive predictive values (NPV and PPV) are not 100%, and both will vary according to pre-test prevalence. NPV for Trisomy 21, 18, and 13 is greater than 99% when the pre-test prevalence is lower than 1/10. PPV may be more dependent on pre-test prevalence. For more information regarding PPV and NPV refer to: www.sonicgenetics.com.au/harmonyppv

	Accuracy
Fetal Sex	99.8% (95% CI: 99.5-99.9)
SCAP	SCA Panel provides probability for non-mosaic fetal sex chromosome aneuploidies. Test performance varies by condition. Limited numbers of sex chromosome aneuploidy cases have been evaluated to date.