Screening Test Report

Reporting facility address	Referrer contact details

PATIENT DETAILS			
Patient ID		Maternal Age (at test)	
Patient Surname		Gestation Age (at test)	
Patient Forename		Patient Date of Birth	
Clinician Name		Date of Blood Draw	
Hospital/Clinic Name		Pregnancy Status:	

SCREENING TEST RESULTS

TRISOMY	BACKGROUND RISK	The IONA® test RISK SCORE	CLINICAL SUMMARY
TRISOMY 21 (Down's Syndrome)	1 : 41[CT]	Less than 1 : 10,000 (<0.01%)	LOW RISK
TRISOMY 18 (Edwards' Syndrome)	1 : 944	Less than 1 : 10,000 (<0.01%)	LOW RISK
TRISOMY 13 (Patau's Syndrome)	1 : 2950	Less than 1 : 10,000 (<0.01%)	LOW RISK

Autosomal Aneuploidies (Chromosomes 2, 8, 9, 12, 14, 15, 16, 22)	TRISOMY 16 DETECTED	REVIEW WITH HEALTHCARE PROFESSIONAL RECOMMENDED
Sex chromosome results	XXX	REVIEW WITH HEALTHCARE PROFESSIONAL RECOMMENDED
Fetal Sex	Female	

Microdeletion	CLINICAL SUMMARY	
1p36	Not Detected	
4p16.3 (associated with Wolf-Hirschhorn Syndrome)	Not Detected	
5p15 (associated with Cri-du-chat Syndrome)	DETECTED	REVIEW WITH HEALTHCARE PROFESSIONAL RECOMMENDED
15q11-q13 (associated with Prader-Willi and Angelman Syndromes)	Not Detected	
22q11.21 (associated with DiGeorge Syndrome)	Not Detected	

Estimated Fetal Fraction	9%

Supplementary Information: Trisomy 13, 18 and 21 The IONA® test estimates the risk of trisomies by determining the relative amounts of chromosomes 13, 18 and 21 in placentally-derived cell-free DNA (cfDNA) extracted from maternal peripheral whole blood using whole genome shotgun next generation sequencing (NGS). The final IONA® adjusted risk score incorporates both the fetal fraction and background risk score at the time of sampling (maternal age by default). If the results of a First Trimester Combined Test are used, a superscript [CT] will appear by the background risk next to any, or all, of the trisomy results. A risk score greater than or equal to 1:150 (~0.67%) is considered high risk. This risk score is capped based on an estimated prevalence of biological factors such as placental mosaicism. 95% is the maximum risk score estimates displayed on the report.
The IONA® test is a screening test and a high risk result should be discussed with a healthcare professional in the context of all available clinical findings, including advising for the need for genetic counselling or additional diagnostic testing (e.g. amniocentesis).

	Observed Sensitivity (2 sided 95% CI)	Observed Specificity (2 sided 95% CI)
T21*	>99.99% (92.3%, 100.0%)	99.5% (98.3%, 99.9%)
T18*	>99.99% (83.2%, 100.0%)	99.8% (98.8%, 100.0%)
T13*	>99.99% (69.2%, 100.0%)	>99.99% (99.2%, 100.0%)

Supplementary Information: Autosomal Aneuploidy (AA) The AA analysis detects full trisomy and full monosomy in the additional human autosomal chromosomes. If Trisomy/Monosomy is detected, the result is displayed as 'Detected' and the chromosome listed. 'Not detected' is reported when no Trisomy/ Monosomy is detected. This analysis is separate from the trisomy analysis and does not reflect on the quality of the result generated by the IONA® test. AA has been validated in singleton and monochorionic twin pregnancies.

Supplementary Information: Sex Chromosome Results The analysis measures proportions of the X and Y chromosomes present in cfDNA to infer on fetal sex with an accuracy of 99.3% and to infer on sex chomosome aneuploides (SCAs). A valid result would be either reported as "female" or "male". In the presence of a sex chromosome aneuploidy, results are reported as: X0, XXY, XYY, XXX (XYY result indicates two or more fetal Y chromosomes). In the absence of an aneuplody, the results are reported as XX or XY. Sex determination and sex chromosome aneuplody testing has been validated in singleton and monochorionic twin pregnancies. This test is separate from the trisomy analysis and does not reflect on the quality of any other result generated by the IONA® test.

Supplementary Information: Microdeletions The test is capable of detecting five clinically relevant microdeletions: 22q11.2, 15q11-q13, 1p36, 5p15, and 4p16.3. All five microdeletions can be screened, or a smaller subset as required. Any microdeletions tested will be listed with a result. If a microdeletion is detected the result is displayed as 'Detected' and the region listed. 'Not Detected' is displayed when no microdeletion is detected at that region. It is possible that a result of 'Unable to generate a result' will be displayed, where a microdeletion has been selected for analysis, but it has not been possible to obtain a result. Please contact your referring laboratory if you are unsure which of the five microdeletions have been screened for. If a microdeletion has not been selected for analysis, nothing will appear on the report for that region. IONA® microdeletion analysis is a screening test. A 'Not Detected' result does not indicate that the fetus will be free from a genetic microdeletion or associated condition. Fetal fraction must be above 5% to produce a valid result for microdeletion screening. If the fetal fraction is too low an 'Invalid' result is reported. Maximum performance of the analysis is expected to be achieved when assessing microdeletions of ≥3Mb. Whilst it may be possible to detect microdeletions in the 1-3Mb size range depending upon genomic breakpoints and the specific microdeletion being analysed, at this time resolution to this level has not been validated. There is an untested but presumed to be greater risk of a false negative result in the 1-3Mb size range. This analysis is separate from the aneuploidy/trisomy analysis and does not reflect on the quality of these result(s) generated by the test. Microdeletions have been validated in singleton and monochorionic twin pregnancies.

Test Limitations In rare cases, analysis of cfDNA derived from the feto-placental unit may not correlate with the fetal genotype. The IONA® test may be affected by any chromosomal change which affects the genomic ratio. Thus, inaccurate test results or a failure to obtain test results may occur in rare circumstances which include but are not limited to biological factors affecting the mother including those arising during pregnancy; conditions affecting the pregnancy or fetus such as confined placental mosaicism (CPM), partial trisomy or translocations, intrauterine fetal demise or disappearing twin. This list is inclusive but not exhaustive. The IONA® does not screen for or rule out the possibility of other genetic conditions, balanced or unbalanced chromosomal abnormalities or mosaic anomalies being present other than those expressly identified in this document. The IONA® test is not intended to identify pregnancies at risk for open neural tube defects and is not a replacement for routine pregnancy monitoring.

Originating sample ID:

Sample notes (if entered):

Sequencing run and sample validity checks passed: **Yes**

IONA® Software version: **TOA**: 2.0.2.1912; **DAA**: 2.0.2.1769