eurofins | Biomnis

Test Request and Patient Consent Form
Non-Invasive Prenatal Testing (NIPT)

PLEASE WRITE CLEARLY USING CAPITAL LETTERS

Protocol No. (internal use only)

ORDERING CLINIC INFORMATION

Healthcare Professional Name | Institution / Clinic Name | Account Number

Address | Post Code

Telephone | Email

PATIENT INFORMATION

First Name | Surname | Patient ID / Medical Record No | Date of Birth (DD/MM/YY)

CLINICAL INFORMATION: Sample and Pregnancy

Last Ultrasound Date DD/MM/YY | Gestation Weeks/Days | Date of Blood Draw DD/MM/YY | Gestation Weeks/Days | Maternal Weight Kg | Maternal Height Cm

SINGLE Pregnancy ☐YES ☐NO

TWIN Pregnancy ☐YES ☐NO

Monochorionic ☐YES ☐NO

Dichorionic ☐YES ☐NO

Not available for all test options (see over)

TEST INDICATIONS

Advanced maternal age	☐YES	☐NO
Parental anxiety (low risk)	☐YES	☐NO
High Serum Screen result (high risk)	☐YES	☐NO
Ultrasound anomaly	☐YES	☐NO
Previous pregnancy affected by chromosomal/genetic disease	☐YES	☐NO
Family history of genetic disease	☐YES	☐NO

Notes for any other relevant information:

NIPT TEST TYPE REQUESTED *(please tick ONE NIPT test option)*

☐ PrenaTest®	Chromosome 21
☐ Ninalia 3	Chromosomes 21, 18, 13 only
☐ Ninalia 5	Chromosomes 21, 18, 13, X, Y
☐ PrenatalSAFE® Plus	Chromosomes 21, 18, 13, X, Y, panel 6 Microdeletions* + Trisomies 9 and 16 option
☐ PrenatalSAFE® Karyo	Genome-wide NIPT that provides karyotype-level insight
☐ PrenatalSAFE® Karyo Plus	Genome-wide NIPT that provides karyotype-level insight + panel 9 Microdeletions**
☐ PrenatalSAFE® COMPLETE	PrenatalSAFE® Karyo + GeneSAFE™ Complete
☐ PrenatalSAFE® COMPLETE Plus	PrenatalSAFE® Karyo Plus + GeneSAFE™ Complete

* ***6 panel microdels:*** *DiGeorge syndrome, 1p36 deletion syndrome, Angelman Sydrome, Prader-Willi syndrome, Cri du Chat syndrome and Wolf-Hirschhorn Syndrome.*

** ***9 panel microdels:*** *All 6 listed above plus Langer-Gleidon syndrome, Jacobsen syndrome and Smith-Magenis syndrome.*

Do you wish to know the fetal gender? ☐YES ☐NO | Is it a redraw? ☐YES ☐NO | Previous file number:

SINGLE GENE DISORDER TEST ONLY ☐ GeneSAFE™ Inherited ☐ GeneSAFE™ *de novo* ☐ GeneSAFE™ Complete (*Inherited + de novo*)

PATIENT CONSENT

I consent to the test I have chosen and confirm that I have been informed about the purpose, scope and limitations of the test by my healthcare provider. I understand this is a screening test for selected abnormalities and the results should be reviewed by my healthcare provider. I have had the opportunity to ask questions and understand I can request further information and genetic counselling.

I consent to the use of leftover specimen and health information in the Patient Informed Consent document.

I agree that my personal data may be used for auditing and quality control purposes as outlined in the Patient Informed Consent document and understand I can withdraw my consent at any point.

Signature ✗ _____ Date: dd/mm/yyyy _____

HEALTHCARE PROFESSIONAL CONSENT

I verify that the patient and prescriber information in this form is complete and accurate to the best of my knowledge and that I have requested this screening test based on my professional judgement of medical necessity. I have addressed the limitations of this test, and have answered any questions to the best of my ability. I understand that Eurofins may need additional information, and I agree to provide it as needed for purposes of reimbursement.

Signature ✗ _____ Date: dd/mm/yyyy _____

NIPTUK_TRF_V2_JAN_2019

Patient Informed Consent for Eurofins Non-Invasive Prenatal Tests

This blood test is designed to measure the combined maternal and fetal DNA circulating in the mother's blood and is considered a genetic screening test. This test predominantly screens for trisomy's 21, 18 and 13 with additional test options available for all other chromosomes and some common microdeletions. The laboratory performs the tests using Next Generation Sequencing (NGS) technology powered by Illumina and sometimes QPCR methods. It is important to note this is NOT a diagnostic test. It is therefore essential that all positive results are confirmed by an invasive test to confirm diagnosis (amniocentesis or chorionic villus sampling).

ABOUT EUROFINS NON-INVASIVE PRENATAL SCREENING TEST

When pregnant, there is maternal and fetal DNA circulating in the mother's blood. This genetic screening test can tell if there are too many or fewer copies (also known as "aneuploidy") of certain chromosomes present which if the mother does not have an aneuploidy herself, suggest that it has to be present in the fetus. The screen can also test for sex chromosomes (X and Y) for potential aneuploidy.

Common Aneuploidies: Trisomy 21 (Down's syndrome), Trisomy 18 (Edward's syndrome), Trisomy 13 (Patau syndrome)

Trisomies occur when three, instead of the usual two, copies of chromosome are present. Trisomy 21, trisomy 18 and trisomy 13 are three of the most commonly occurring trisomy's seen in babies at birth. Although the outcomes are variable, these conditions can cause mild intellectual disabilities and can cause multiple physical problems including congenital heart defect, defects in other organs, and a shortened life span. The chance of having a baby with one of these conditions gets higher as the woman gets older.

Sex Aneuploidies

Sex chromosome aneuploidies are conditions in which there is a change from the usual two copies of sex chromosomes in males (XY) and in females (XX). About 1 in 400 babies that are born will have a sex chromosome aneuploidy. The most common are caused by missing a sex chromosome in females (45 X or monosomy X, also called Turner's syndrome) or an extra chromosome in both males and females (47 XXY known as Klinefelter syndrome, 47 XYY known as Jacobs syndrome or 47 XXX known as Trisomy X). Children with sex chromosome aneuploidy can have difficulties with language skills, motor skills and learning, but can lead healthy and productive lives.

OTHER FETAL CHROMOSOMAL ANEUPLOIDIES AND MICRODELETION SYNDROMES

Other structural chromosomal aberrations (deletions and duplications) and rare aneuploidies across the whole fetal genome (for example more common being Trisomy 9, 16, 22) are not currently screened for with conventional NIPT yet can account for 16.9% of undetected chromosomal abnormalities. Please see www.prenatalsafe.co.uk for more details.

THE TESTING PROCESS

To analyse the DNA from the mother's blood, the healthcare provider will take a blood sample (single 10ml tube) using standard blood draw methods (*NB two tubes for the PrenaTest™ chromosome 21 only*). The physical risk to the mother is minimal. Some important points about the testing and reporting process:

- Test results are confidential to the extent required by law.
- Only experienced personnel will have access to the blood sample and testing information and results. All results will be kept confidential as per applicable laws and guidelines. Results will only be disclosed to your ordering healthcare provider(s).
- Only authorised and requested tests will be performed on identifiable blood samples.
- Collecting information on the pregnancy after prenatal diagnosis is part of a laboratory's standard practise for quality purposes, and is required by laboratory accreditation. As such, Eurofins processing laboratories may contact the healthcare provider to obtain information and the patient agrees to share such information with Eurofins Company.

The test is performed after 10 weeks, 0 days of confirmed pregnancy. Adequate DNA in the blood sample (10ml) is required to complete the test. Additional samples may be needed if the sample is damaged in shipment, incorrectly submitted or has a low amount of cell-free fetal DNA. Following analysis at a Eurofins processing laboratory, the results will be sent to the heathcare provider indicated on the test request form. It is the responsibility of the healthcare provider to understand the specific uses and limitations of this screening test, and to ensure the patient understands them as well.

The test is performed alongside an early stage or first trimester ultrasound, which remains essential to date the pregnancy, detect multiple pregnancies, and detect potential congenital abnormalities.

INTERPRETATION

	Sensitivity	Specifity	PPV	NPV
PrenaTest® (T21) only	100%	100%	–	100%
For a cohort of 966 samples validation study (*lower 1-sided 95% CI)				
Ninalia 3 and 5 (T21)	98.90%	>99.9%	99.00%	99.99%
Ninalia 3 and 5 (T18)	90.00%	99.99%	96.00%	99.99%
Ninalia 3 and 5 (T13)	>99%	99.99%	93.00%	99.99%
For a cohort of 3107 patients (data from the supplier Illumina, Feb. 2017)				
PrenatalSafe Karyo (T21)	100%	99.99%	98.88%	100%
PrenatalSafe Karyo (T18)	100%	99.99%	86.22%	100%
PrenatalSafe Karyo (T13)	100%	99.99%	92.31%	100%
PrenatalSafe Karyo (SCA)	100%	99.90%	75.00%	100%
PrenatalSafe Karyo (Monosomy X)	100%	99.94%	71.23%	100%
PrenatalSafe Karyo (Trisomy Rare)	100%	99.94%	58.82%	100%
Prenatal Karyo (CNV)	100%	99.96%	61.54%	100%
For cohorts of 36, 192 and 11,932 patients				
Fiorentino et al. The utility of genome-wide non-invasive prenatal screening. Pren Diagn 2017;37:593-601				
Fiorentino et al. The importance of determining the limit of detection of non-invasive prenatal testing methods. Prenat Diagn.2016				

** Ref qNIPT brochure WM-1269-EEEN-001*
*Sensitivity 100% (*91.88%), Specificity 100% (-), PPV -, NPV 100% (*99.68%)*

RESULTS AND LIMITATIONS

The Eurofins NIPT screening tests do not test for all health problems. PrenaTest T21 is NOT available for twins. All other test options are available for single pregnancies and monochorionic twins. Dichorionic twins are excluded from test options with sex chromosome aneuploidies and microdeletions due to ambiguity of monosomy X and CNV's. Fetal gender can only be reported as presence/absence of Y chromosome.

Negative (no aneuploidy detected) results do not eliminate the possibility that the pregnancy may have other chromosomal/genetic conditions, birth defects or other complications. Consequently, it is essential to follow up rigorously with morphological ultrasounds.

Positive (aneuploidy detected) result does not necessarily mean that the fetus carries trisomy 21, 18 or 13. It is essential that all positive results are confirmed by an invasive test. There is a small possibility that the results may not reflect the chromosomes of the baby, but instead might reflect chromosomal changes to the placenta (confined placental mosaicism), or in the mother (chromosomal mosaicism).

This test represents the newest service currently available for prenatal testing. However, as with any complex genetic test, there is always a chance of failure or error in sample analysis. Extensive measures are taken to avoid these errors and the tests are rigorously validated and processed in ISO accredited laboratories. Test performance data and publications can be found on our website www.prenatalsafe.co.uk

DATA PROTECTION INFORMATION

Your privacy is important to us. Our privacy notice sets out the basis on which Eurofins process your personal data. You can read our privacy policy, available on https://www.eurofins.co.uk/cookies/, to understand Eurofins practices regarding your personal data and how Eurofins will treat it.

Eurofins Biomnis UK Lab, 17 Doman Road, Camberley, Surrey, GU15 3DF Email: Labenquiries@eurofins.com Tel: 01276 414 522