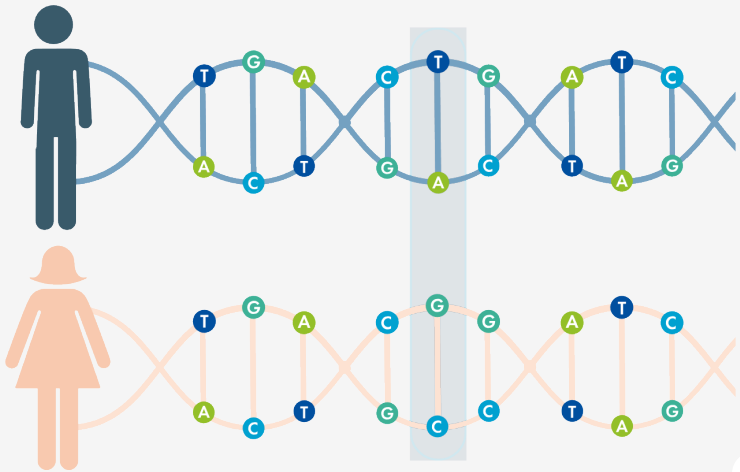
Smart PGT-A PLUS

Preimplantation Genetic Testing for Aneuploidies

Igenomix® PART OF VITROLIFE GROUP

To enhance the genetic testing of IVF embryos and expand the diagnostic capabilities and clinical utility of our preimplantation genetic testing for aneuploidy (Smart PGT-A), we have developed and validated **a parallel targeted Next-Generation Sequencing (NGS) strategy using the power of SNP technology without the need for parental samples.**

Single Nucleotide Polymorphisms (SNPs) are changes in single nucleotides distributed throughout the genome and frequently vary at the same genomic position between individuals. Most SNPs have only two different alleles.



SNPs can be used for 'DNA fingerprinting' to detect ploidy differences, DNA contamination and the genetic relatedness of embryos.

We call this dual assessment **Smart PGT-A Plus**. Building on our extensive expertise in the field of embryo genetic testing, this advanced solution goes beyond Smart PGT-A by incorporating additional features including ploidy analysis, sibling embryo genetic relatedness and DNA contamination detection into a standard PGT-A workflow.

Smart PGT-A & Smart PGT-A Plus **Compared**

		Smart PGT-A	Smart PGT-A PLUS
Technology	NGS	+	+
	SNPs	-	+
Results	Aneuploidies	+	+
	Mosaicism	+	+
	Segmentals*	≥ 10 MB	≥ 10 MB
	Accuracy	>98%	>98%
	Mitoscore	+	+
New features	Ploidy	-	+
	Contamination (maternal and external)	-	+
	Cohort check	-	+

*PGT-SR: ≥6 MB

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Experience the power of our new **Smart PGT-A Plus**, a 4-in-1 genetic test that empowers informed decision-making for embryo transfer

1 SMART PGT-A

Our custom and validated in-house technology that combines next-generation sequencing (NGS) with advanced algorithms and machine learning, enabling the genetic analysis of embryos with exceptional accuracy and reliability.

+ SNPs ANALYSIS

In parallel to our existing Smart PGT-A, our advanced approach includes an additional targeted Next Generation Sequencing (NGS) test, using the power of Single Nucleotide Polymorphism (SNP) analysis, to improve accuracy and confidence in embryo selection.

2 **Genetic Pronuclear Check | Haploidy + Triploidy Detection:** Smart PGT-A Plus enables the detection of both haploidy and triploidy. This crucial assessment ensures the selection of embryos with the correct chromosomal content. Smart PGT-A Plus also increases the number of viable euploid embryos available for transfer by detecting true 2PN (diploid) embryos from among morphologically identified 0, 1 and 2.1/3PN embryos.

3 **Cohort check:** Our quality control process includes embryo cohort check analysis, where we employ DNA fingerprinting techniques. This ensures accurate identification, differentiation and the assurance that the tested embryo is genetically related to the others in the patient's cohort reducing the risk of sample mix-ups due to human error.

4 **Detection of DNA Contamination:** We have implemented measures to identify and detect both external cell/DNA and maternal cell contamination increasing the accuracy and confidence of the testing process significantly reducing the risk of misdiagnosis.

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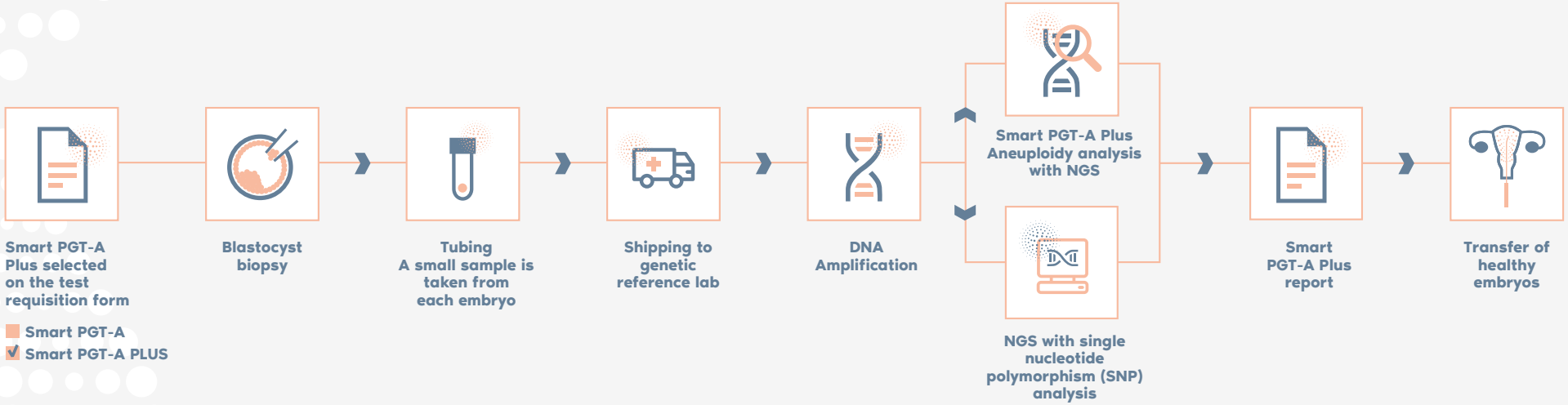
Smart PGT-A Plus uses two independent analyses on every sample to deliver a comprehensive 4-in-1 genetic test for aneuploidy in embryos.



www.igenomix.eu

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Who should consider Smart PGT-A Plus?

While any couple can have an embryo with aneuploidy, the chances can increase with the following factors:

- Female age over 35
- History of recurrent pregnancy loss
- Previous IVF failure
- Prior child or pregnancy with a chromosome abnormality

Smart PGT-A Plus is especially recommended for:

- Rescue of high-quality embryos derived from abnormally fertilized oocytes (0PN, 1PN, 2.1PN/3PN)
- Previous or recurrent triploid pregnancy
- Previous molar pregnancy
- Recurrent or sporadic miscarriage after conventional PGT-A
- Patients with severe male factor or high rate of diploidy in sperm

What makes our Smart PGT-A Plus stand out from the rest?

Offers **enhanced confidence with robust and accurate results,** utilizing two independent technologies for DNA analysis.

Strengthened by the power of big data and artificial intelligence, effectively overcoming the limitations of human subjectivity and greatly reducing the risk of human error.

Maximizes the likelihood of successful pregnancy by carefully identifying optimal embryos for transfer.

Reduces the risk of miscarriage due to previously undetected abnormalities (e.g. triploidy).

Increases the number of viable embryos available for transfer by enabling the identification of diploid blastocysts derived from abnormally fertilized oocytes.

Enhances accuracy and reduces the risk of misdiagnosis by detecting external and maternal cell DNA contamination.

Provides confirmation that all embryos from the same patient are genetically related to each other without the need for additional parental samples.

Ensures enhanced quality control in the laboratory procedures conducted within your IVF lab, providing greater assurance.