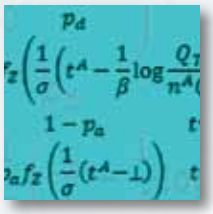
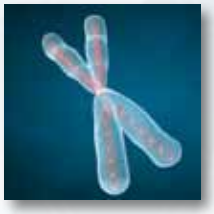
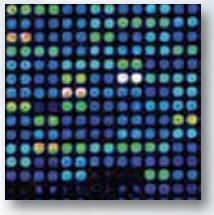
GSN
GENE SECURITY NETWORK

24 Chromosome Aneuploidy Screening With Parental Support™

Gene Security Network (GSN), the leader in microarray preimplantation genetic diagnosis (PGD), offers PGD for all 24 chromosomes using an Illumina microarray platform coupled with a proprietary bioinformatics algorithm to produce highly reliable test results. Testing is performed on Day 3 blastomeres sent to our CLIA-certified laboratory in Redwood City, California. Results are returned by the morning of Day 5, in time for embryo transfer.

ABOUT PARENTAL SUPPORT

Microarray analysis

DNA from each blastomere undergoes whole genome amplification (WGA) prior to being run on a 300k probe Illumina microarray returning thousands of data points on each chromosome.

Array results from each blastomere are inherently noisy due to WGA of a single cell, typically characterized by high rates of allele drop-out (ADO), drop-ins (ADI), variable amplification biases, and hybridization errors. The raw data must therefore be interpreted using our Parental Support bioinformatics methodology.

Parental Support Bioinformatics

The Parental Support algorithm uses parental genotype information and a Bayesian inference technique to evaluate the probabilities of hypotheses covering multiple blastomere chromosome copy number states. It determines the best copy number hypothesis to explain the embryonic data as measured. This is reported as a copy number call for each chromosome accompanied by a computed confidence that this is the true state of the blastomere. Unlike quantitative methods that use only blastomere data, the algorithm leverages the fact that the embryonic DNA is derived from parental DNA. This considerably reduces errors caused by variable chromosome amplification and ADO levels across different blastomeres. Results are reported for all 24 chromosomes with turnaround in time for Day 5 transfer without embryo freezing.

THE MOST RELIABLE PGD RESULTS

This two-step process — microarray analysis of all 24 chromosomes plus Parental Support bioinformatics — produces results with a reliability greater than 99% on the blastomere tested more than 85% of the time. The reliability of each chromosome call is explicity computed and reported, such that calls with reliability below 99% are identified and visible to the IVF provider. Parental Support for aneuploidy offers many other advantages including:

- Determination of parental origin of aneuploidy
- No results rate of <7%
- Detection of DNA contamination
- Detection of uniparental disomy (UPD)
- Detection of haploidy and polyploidy

The following testing can be performed from a single cell in parallel with 24 chromosome aneuploidy screening:

- Inherited unbalanced structural chromosome rearrangements (translocations and inversions)
- Single gene analysis under IRB study

FIND OUT MORE

Parental Support for aneuploidy is only available through partner IVF centers. If you would like more information about Parental Support or about becoming a partner center, visit our website at www.genesecurity.net or call us at 1-877-GSN-4PGD.