Effective Embryo Ranking with the OnePGT Solution

The universal genome-wide NGS solution for comprehensive preimplantation genetic testing
Agilent OnePGT Solution

Comprehensive Insights to Improve Embryo Ranking

Agilent OnePGT is the only genome-wide NGS-based solution that integrates preimplantation genetic testing (PGT) for single gene disorders (PGT-M), translocations (PGT-SR) and aneuploidies (PGT-A) in a single workflow (Figure 1) with verified automated calling.

Say goodbye to difficult, labor-intensive, custom assays and say hello to a convenient, universal, generic, easy-to-use, genome-wide NGS approach!

Genome-wide NGS
The new standard in preimplantation genetic testing, next generation sequencing (NGS) offers reliable and accurate results. OnePGT leverages a genome-wide NGS approach, an efficient solution for comprehensive preimplantation genetic testing.

Universal workflow
Combined testing for single-gene disorders, translocations and aneuploidies in one comprehensive, easy-to-use, workflow. With Agilent OnePGT you can generate PGT-M, PGT-SR, and PGT-A results for each embryo using a single biopsy.

Automated data analysis
Agilent’s Alissa OnePGT software enables automated data upload, analysis and report generation at your fingertips. Integrated QC measures and pre-test features provide additional information before further commitment.

Proven performance
Agilent OnePGT solution is the only genome-wide NGS solution that is verified for:
- Concurrent and individual PGT analyses
- Single-gene disorders and translocations
- Segmental and whole chromosome aneuploidies

Expert onboarding and support
- Hands-on-training to support seamless integration in the laboratory
- A team of multi-lingual field application scientists
- Dedicated e-mail for Agilent OnePGT customers: OnePGT@agilent.com
- Experienced and high quality support

Your partner in success
Agilent Technologies Inc., a global leader in life sciences, diagnostics and applied chemical markets, is the premier laboratory partner. Agilent works with customers in more than 100 countries, providing instruments, software, services and consumables for the entire laboratory workflow.

Genome-wide, universal NGS solution for comprehensive preimplantation genetic testing with verified, automated analysis—from a market leader you can trust.
One Workflow -
Save Time While Generating Enhanced Insights

Agilent OnePGT offers integrated testing for single-gene disorders, translocations and aneuploidies in one convenient, cost-effective solution (Figure 2) to help you make well-informed, confident choices when prioritizing embryos.

Ensure your lab is equipped to manage the rapidly changing marketplace.

Figure 2. Starting with one embryo biopsy, Agilent OnePGT solution provides the necessary components for Whole Genome Amplification (WGA), NGS library preparation and data analysis for a singular, straightforward workflow for all three PGT applications.

* Sequencing consumables not included

Be a frontrunner

There is increasing pressure on fertility clinics to offer comprehensive PGT. Studies\(^1\) have shown that concurrent aneuploidy testing when used with PGT-M/-SR can provide valuable information for embryo ranking and can lead to improved outcomes for single embryo transfers.

In the past, laboratories have had to invest in multiple platforms to offer the full range of PGT services. But the cost involved in implementing, maintaining and integrating several workflows can be expensive and introduce numerous failure points. Expand your menu of PGT services while reducing investment and maintenance cost with just one solution, Agilent OnePGT.
Verification testing in collaboration with Key Opinion Leaders showed 100% PGT concordance with reference methods.\(^2,3\)

High PGT-A sensitivity and specificity demonstrated for whole and segmental chromosome aberrations.

**External verification studies**

100% PGT-M & PGT-SR concordance (n=196; across two external sites)

160 PGT-M plus 36 PGT-SR blastomere and trophectoderm biopsies inclusive of 22 genetic disorders and 10 translocations across 44 families.

All whole chromosome aneuploid calls confirmed with concurrent PGT-A*.

*93 embryos had sufficient quality and copy number reference data available, of which 23 carried whole chromosome aneuploidies.

**Internal verification study**

98.5% sensitivity with 94.7% specificity demonstrated for PGT-A

Single and few cell samples from 12 aneuploid cell lines (n=84).

5 Mb and 20 Mb lower thresholds demonstrated for few cells and single cell samples respectively

Real-time management and status updates for all your PGT-M, PGT-SR and PGT-A requests across multiple families and IVF cycles.
A Complete Solution, From Sample Collection to Results

Sample collection
- Supported use of both blastomere and trophoderm biopsies
- For monogenic disorders (PGT-M), extract genomic DNA from parents and phasing reference

*Sibling or grandparents of the embryo

Amplification
- Lyse and amplify Amplify embryo biopsy using REPLI-g Single Cell Kit
- Workflow and analysis pipelines are optimized for use with REPLI-g amplified material

*Use only REPLI-g Single Cell Kits supplied by Agilent

Next-generation sequencing
- Fully verified on NextSeq 500/550 and HiSeq2500
- Equivalency testing on HiSeq 3000/4000 and MiSeq/MiniSeq (PGT-SR/A only)

Library preparation
- Prepare sequencing libraries using the proprietary OnePGT library prep kit
- Reduced representation libraries enable genome-wide analysis with lower sequencing costs

Data analysis
- Fully automated analysis processes
- All your PGT requests on one easy-to-read report
- Multiple requests per family feasible
- Reduced burden on analytical interpretation

Reporting
- Detailed summary of all PGT-M, PGT-SR and PGT-A analyses
- Clear, comprehensive information for clinics to make a confident selection and improve the efficiency of IVF cycle management

OnePGT Report

Analysis details

| Family ID | Material ID | DNA type | Parental ID | Sampled from test | Parental kit | Maternal kit | Analysis ID | Created by | Signed off by | Date
|-----------|-------------|----------|-------------|------------------|--------------|--------------|-------------|------------|--------------|------
| Demo6-v1  | Demo6-v1 M  | DNA      | Demo6-v1 M  | Demo6-v1 M       | Demo6-v1 M   |              | Demo6-v1_pgtM_analysis_2 | John Doe   | John Doe     | Aug 20, 2018 04:57:20
|           | Demo6-v1 F  | DNA      | Demo6-v1 F  |              |              |              |              |            |              |      
|           | Demo6-v1 P  | DNA      |              |              |              |              |              |            |              |      
|           |              |          |              |              |              |              |              |            |              |      

PGT-M: NFI1_MSF_MGM
- Genomic location
- Inheritance mode
- Mother: Affected (heterozygous)
- Father: Unaffected

PGT-A
- Chromosomes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, X, Y

Result Summary

<table>
<thead>
<tr>
<th>Embryo ID</th>
<th>Biopsy Type</th>
<th>NFI1_MSF_MGM</th>
<th>PGT-A</th>
<th>Transfer support by PGT-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo6-v1_pgtM_E2</td>
<td>Blastomere</td>
<td>Affected</td>
<td>Loss-on-chr: 19</td>
<td>Undetermined</td>
</tr>
</tbody>
</table>

A fully optimized, end-to-end workflow with clear instructions, verified safe stopping points and in-process QC measures.
## Ordering information

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agilent OnePGT Solution</td>
<td>Includes reagents for genome-wide amplification and library preparation, software and cloud services</td>
<td>G9426AA</td>
</tr>
<tr>
<td>Agilent OnePGT Solution without REPLI-g</td>
<td>Includes reagents for library preparation, software and cloud services</td>
<td>G9427AA</td>
</tr>
<tr>
<td>Agilent OnePGT HOT workshop</td>
<td>Hands-On-Training workshop in Agilent facility to train customers on OnePGT workflow and data analysis</td>
<td>R2600A</td>
</tr>
</tbody>
</table>
Get your lab started using Agilent OnePGT today:
onepgt@agilent.com