

Cytogenetic Testing Guide

Transitioning testing to a new lab can be stressful for lab staff and clinicians. This guide will provide useful information as you transfer your cytogenetic testing to ARUP Laboratories.

Best Practices for Test Ordering

Following these practices will help prevent test delays and ensure optimal service.

- Always provide the clinical indication for testing to ensure the appropriate culture for best diagnostic yield.
 - Provide clinical indication via:
 - An order note, or
 - Submit a complete patient history form for the test ordered, if available.
 - Clearly indicate the sample type (bone marrow, peripheral blood, etc.).
 - When ordering a test on bone marrow, provide bone marrow transplant history and sex of donor, if available.
- If submitting multiple associated specimens at the same time, please create a separate order for each specimen.
 - Example: Left and right bone marrow draws should be submitted as two separate orders.

Fluorescence in Situ Hybridization (FISH) Testing

- When ordering the following tests, always specify which probe(s) are needed:
 - Chromosome FISH, Interphase (2002298)
 - Chromosome FISH, Metaphase (2002299)
 - FISH, Interphase, CD138+ Cells (3002737)
- **Myeloma and plasma cell neoplasms:** We have two FISH test options that include CD138-positive sample selection before the cell pellet stage to enrich for plasma cells.
 - Multiple Myeloma Panel by FISH (3002063)
 - A comprehensive myeloma panel with set probes
 - FISH, Interphase, CD138+ Cells (3002737)
 - Individual or select myeloma-related probes

Accepted Tube Types

NaHep Tubes: Preferred for all testing

We will attempt testing on any received sample that is not clotted or hemolyzed.

EDTA: Acceptable for microarray

EDTA tubes are not ideal, as cultures may be needed to visualize a suspected structural abnormality.

Contacts

Client Services

Available 24/7

1-800-522-2787

Integrated Oncology and Genetics Processing (GenPro)

Available 7 a.m.–6 p.m. every day
(including weekends)

1-800-242-2787 ext. 3301

Contact for general customer service regarding genetics and oncology testing.

Dial ext. 3301 for questions regarding turnaround time, the status of an order or result, test order modifications or cancelations, or Exception Handling.

Path-on-Call Service

Available as needed

Contact Client Services and ask for Path-on-Call.

Contact if you have questions regarding test ordering across labs or general interpretative questions.

- Path-on-Call is staffed by pathology residents who will route specialty questions appropriately.
- Medical directors and fellows are available as needed for interpretative questions related to our cytogenetic, FISH, and microarray testing.

Additional Information

Constitutional Cytogenetic Testing

- Orders for chromosome analysis on newborns ≤ 7 days old are always expedited, and a preliminary result is provided two to three days after sample receipt.
- Preliminary reports are provided in certain cases with genomic microarray findings so as not to delay reporting of results when chromosome results are pending.

Postnatal Microarray

- We will add a structural chromosome study if it's suggested by the results.
 - For example, if trisomy 21 is detected, a structural chromosome study will be added to rule out a Robertsonian translocation or unbalanced translocation.

Chorionic Villus Sampling and Products of Conception

- We morphologically examine and dissect chorionic villus sampling (CVS) and product of conception (POC) specimens:
 - Internal ARUP data show our female-to-male ratio is 1:1.
 - Chromosome analysis and microarray results are available.
 - Microarray is available on fresh or formalin-fixed, paraffin-embedded (FFPE) tissue.

Process-and-Hold Options

- Sample is processed to a cell pellet, or DNA is extracted and held for add-on testing following results of other testing.
- Testing can be canceled with processing fee, or sample can be fully tested later.

Oncology Cytogenetic Testing

We are Children's Oncology Group (COG)-certified and maintain high quality standards for clinical detection sensitivity.

- *PML-RARA* FISH test orders are always expedited.
- Chromosome analysis is optimized for high diagnostic yield and efficient turnaround time.
 - Two different cell cultures are initiated for every submitted specimen.
 - We offer routine medical director review of more karyograms per case than are required by the College of American Pathologists (CAP).
- When test results are available, we will review all concurrent and previous cytogenetic test results and incorporate this information into the report.
 - We may reach out for additional information, such as a pathology report or to recommend add-on testing during interpretation.
- If multiple FISH panels are ordered on the same specimen and the panels contain duplicate probes, we will cancel one of the panels and change the order to our Chromosome FISH, Interphase test (2002298) to include all needed probes.
 - This eliminates redundant testing and minimizes your costs.
- Process-and-hold options
 - Sample is processed to a cell pellet, or DNA is extracted and held for add-on testing following results of other testing.
 - Testing can be canceled with processing fee, or sample can be fully tested later.

Genetic Counselors

1-800-242-2787 ext. 2141

Contact for questions regarding constitutional cases, including test selection questions, family history case consultation, results interpretation, and management of complex cases, especially if reflex testing or multiple tests are ordered on the same sample.

Visit aruplab.com/cytotests for a full list of available cytogenetic tests.

Laboratory Test Directory

Visit our Laboratory Test Directory for detailed test information, including:

- Test code
- Turnaround time
- Specimen collection and shipping information
- Patient history forms