Patient Derived Oncology Models

Transforming the Search for Personalized Therapies

Partner with us and draw on our unique expertise to ignite new progress and possibilities in disease research.
AMSBIO offers Cellaria high quality, next generation in vitro disease models that reflect the unique nature of a patient’s biology. All our models begin with a patient specimen, traceable to clinically relevant details that inform model characterization. By broadening patient representation, our models enable researchers and innovators to gain insights for the development of the next generation of personalized therapeutics.

How the Technology Works

Using proprietary technology and methods, we preserve the patient-specific and disease-oriented cells in stable, long-term cell models. We combine specialized expertise with our integrated outreach services to source, profile, and model desired cell types. For cancer, these cell models exhibit molecular and phenotypic characteristics that are highly concordant with the patient. For RNA-mediated iPS cell line derivation, cell models enable integration of disease-specific mechanisms of action.

AMSBIO works with scientists in world-renowned teaching hospitals, leading pharmaceutical companies, and contract research organizations to meet their needs with our innovative products and services.

Transforming the Search for Personalized Therapies

Build patient-specific models

Improve the understanding of mechanisms of action

Transform the search for a cure

Accelerate development of personalized therapies
Cancer drug discovery has relied on the same models that have been in use for decades. Progress in the last 20 years has highlighted the tremendous heterogeneity of the disease, opening the door for a new supply of relevant models to keep pace.

- Primary cancer cells from patient tumors do not readily proliferate in culture, contributing to extremely low success rates of cell line derivation. Success rates of deriving a cell line from patient tumors are as low as 0.7%. By increasing the success rate, we can add cell models that were previously not obtainable.

- Traditional cancer cell lines lack reproducibility across multiple model systems. Traditional cell lines have limited utility for predicting success in clinical trials, resulting in high failure rates for new oncology drug entities, thereby limiting their relevance as a tool in cancer drug discovery.

- Cost and Complexity. PDX models have been shown to improve prediction of patient responsiveness and clinical efficacy; however, the complexity and costs associated with maintaining a large PDX library continues to be a significant hurdle.

Drug discovery researchers require more predictive and effective alternatives that will ensure better drug targets and ultimately, improved patient outcomes.
Introducing Patient-Specific Cell Models from AMSBIO

Our *in vitro* cancer cell models are derived directly from patient tumors to reflect the unique nature and complexity of each patient’s disease.

- Developed with a breakthrough process
  Our process captures more of the cellular diversity of each tumor through maintenance of multiple cell populations.

- Unparalleled stability
  Our cell models are stable and show high concordance with the original tumor genotype through high passage as measured by SNP analysis.

- Backed by extensive data
  Our models are traceable back to initial patient tumor and clinical conditions, simplifying the analysis of patient-specific responses.

- Stringent quality controls
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- Predictable growth rates
  Obtain the cells you need for high-throughput drug screening via optimized expansion protocols.

Quality Testing for Cell Lines
All cell models are screened for major categories of cell contaminants, including:
1. Mycoplasma
2. Microbial contaminants – sterility testing
3. Viruses – human pathogens screen
4. Cell line cross-contamination: interspecies & intraspecies – STR profiling

Lot-specific growth rate and protocol is provided for every customer. Our QC process ensures stable growth rate for each lot.

Other Primary Cancer Cells
Provided with the original pathological diagnoses and analyzed for key mutations, AMSBIO primary human cancer cells present the real characteristics of their *in vivo* state, remain heterogeneous for several passages and thus enhance pharmacogenetic and molecular diagnostic testing abilities. These patient specific cells add to a range of products offered by AMSBIO to help researchers develop more physiologically relevant models to study cell behavior.

<table>
<thead>
<tr>
<th>Description</th>
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<th>Catalogue No.</th>
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<tbody>
<tr>
<td>Breast tumour primary cancer cells</td>
<td>1M cells</td>
<td>CL 04002-CLTH</td>
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<tr>
<td>Prostate tumour primary cancer cells</td>
<td>1M cells</td>
<td>CL 04001-CLTH</td>
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<tr>
<td>Colon tumour primary cancer cells</td>
<td>1M cells</td>
<td>Enquire</td>
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At 20, 40, and 150 doublings the SNP profile remained over 95% identical to the original tumor profile.

Performance demonstrates stable and predictable growth rate.
Renaissance media utilizes a simple, feeder-free protocol for multiple solid tumor types including breast, lung, colon, and ovarian. RETM is specifically formulated for extended in vitro propagation and our approach produces cultures with less variability and more reproducible results than is typically seen with traditional media.

- **Cultivate tumors with greater success:**
  Over 80% success establishing extended primary cultures from patient tumor samples.

- **Unsurpassed growth:**
  Promotes the expansion of primary cancer cells for greater than 15 population doublings, without a cell-selection phase typically seen with traditional media.

- **Genomic stability to late passage:**
  Cells derived and expanded in Renaissance exhibit high genomic concordance with the original tumor.

### WIT Culture Media for Primary Normal Cell Culture

WIT Culture Media is a line of media optimized for the expansion of normal human mammary epithelial cells. These are completely defined, serum-free media. WIT media support expansion over 15 passages without the growth arrest seen in other normal primary culture media. WIT has been used for a broad range of applications by scientists including growth of fallopian tube, lymphoma and prostate luminal cells.

### Ordering Information

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<tr>
<th>Description</th>
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<th>Catalogue No.</th>
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<tbody>
<tr>
<td>WIT-P™ Culture Medium</td>
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<td>CM-0101</td>
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<tr>
<td>WIT-T™ Culture Medium</td>
<td>500 ml</td>
<td>CM-0103</td>
</tr>
<tr>
<td>WIT-P-NC™ Culture Medium</td>
<td>500 ml</td>
<td>CM-0104 (available outside United States)</td>
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### Sample Lung Cancer Cell Model: Over 200 Population Doublings

![Graph showing population doublings over time](image-url)

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<tbody>
<tr>
<td>Renaissance Essential Tumor Medium</td>
<td>500 ml</td>
<td>CM-0001</td>
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CANCER RESEARCH AND DRUG SCREENING SERVICES

We offer a suite of custom services that empower translational researchers with more cost-effective solutions that address their need for better reproducibility and biological relevance.

Cancer Research Services
We can develop models based on your specific needs as defined by clinical condition, mutational profile, or other characteristics important to your research.

- We specialize in difficult tumor types and can create models where none exist.
- Procure required patient samples from ethical, consented sources.
- Characterize and compare the cell model to the original tumor specimen using standard and customer-defined assays.

Custom Cancer Cell Model Development
AMSBIO can create custom in vitro cell models from highly sought out disease indications, source the appropriate tumor for your needs, and expand and bank your finalized model(s).

Each of our models is derived directly from a patient’s tumor and optimized for scalability without any genetic manipulation. Backed by extensive clinical data, our cell models are fully consented and documented, and subject to comprehensive quality control.

Cancer Drug Screening Services
We offer the most advanced and comprehensive cancer drug screening services available today. Our partner ScreenIn3D uses advanced microfluidic based chips to maximize read-outs with minimal input of valuable tissue.

- This microfluidic technology provides a data throughput up to 100 times more than standard ultra-low-adhesion (ULA) plates
- The platform is highly flexible and uses physiologically relevant 3D models. We are able to customise many aspects of our assays, such as cell types, assay duration and readouts, including IHC of multiple spheroids
- Single and combination drug screening, up to 4 drugs per test with dilution curve analysis providing up to 40 concentration curves per biopsy or cancer cell model.
- Minimum amount of biopsy needed, just 10,000 cells for 40x 5-8 point curves
- Concierge customer and technical support; By combining your specific knowledge with our expertise, we develop unique disease models to suit your requirements

Contact AMSBIO to learn how we can accelerate your research.
amsbio.com | info@amsbio.com
References
