



P.O. Box 13888 ▪ 3200 Chapel Hill-Nelson Blvd., Suite 104, Research Triangle Park, NC 27709
Tel 919-547-0692 or Toll Free 1-866-ADIPOSE (1-866-234-7673) ▪ Fax 919-547-0693 ▪ zenbio.com

ZENCOMPLETE™

empowered by

zenbio





TEAMWORK

ZenBio has built a reputation as a trusted research partner, delivering cell-based products of consistent high quality, providing premium customer services, and ensuring our customers receive full value from these products and services. Now, ZenBio introduces ZenComplete™—bringing together enabling products, services, and technologies to accelerate cell biology research across diverse fields including molecular biology, human disease research and cosmetics/personal care research.

ZENCOMPLETE™

ZenComplete is just that: complete. It combines cell-based products as well as premium consulting and research services together in a world-class offering that is:

- **Customized:** Whether you are conducting disease research or cosmetic product development, ZenComplete offers customized products and services uniquely suited to your research requirements.
- **Trusted:** ZenBio products are Good Laboratory Practice (GLP) compliant and certified, are relied on by top research organizations worldwide. Our industry reputation has been enhanced by time-tested services and consulting.
- **Comprehensive:** The ZenComplete portfolio delivers everything you need—products, technologies, services, and consulting—to minimize costs and leverage resources.

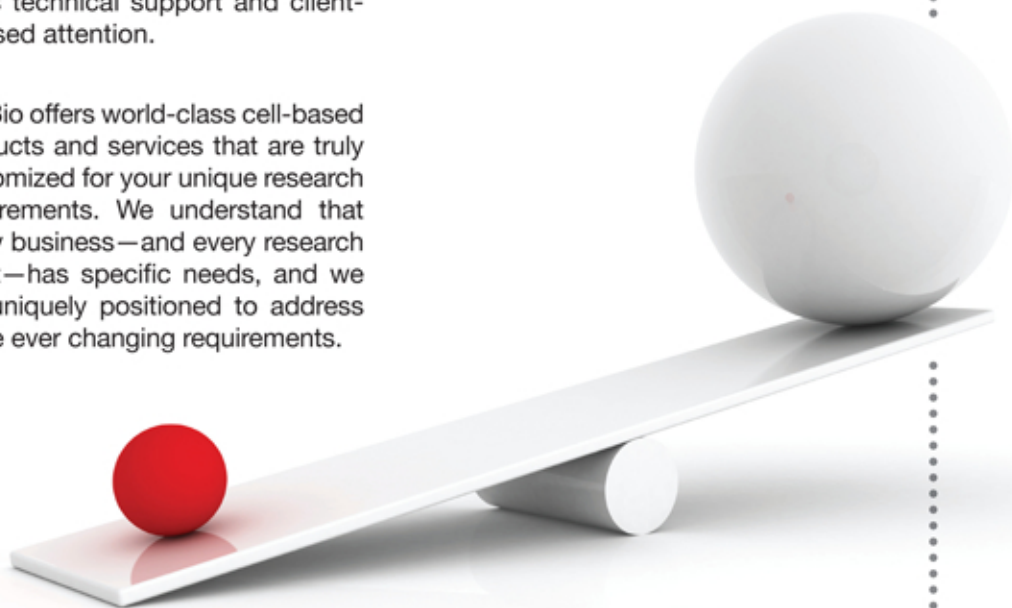
Even as project demands and deadlines increase while research budgets and headcount diminish, your organization can deliver novel disease therapies and safer, more effective consumer products that improve quality of life, and perhaps even extend it. ZenComplete was developed specifically to help you achieve these goals.

...cell-based expertise at your fingertips.

Why Partner with ZenBio?

Since its inception, ZenBio has been a recognized leader in delivering sustainable and ever-expanding research capabilities, reflected by our legacy of scientific success and collaboration, coupled with world-class technical support and client-focused attention.

ZenBio offers world-class cell-based products and services that are truly customized for your unique research requirements. We understand that every business—and every research effort—has specific needs, and we are uniquely positioned to address these ever changing requirements.



As you develop a close relationship with ZenBio, you'll see what so many other organizations have come to expect:

- A real person on the other end of the phone when you call.
- A true dedication to service and customer satisfaction.
- A skilled and dedicated team that can deliver what it promises.
- High-quality product and service package designed specifically for your needs. Every time.

Why Partner with ZenBio?

- Vital expertise and knowledge about cells and cell-based products
- An alternative to ramp-up or build-out of cell-based products infrastructure at your own site, helping you leverage resources
- A dedicated team assigned to help manage your unique projects
- Ability to communicate data and findings directly and in a timely manner
- Knowledge and capabilities to rapidly change direction or adjust your research approach with each project, as needed
- Low overhead and cost containment, delivering significant project savings
- Easy-to-use research services, enabling you to outsource or externalize projects seamlessly
- Assurance that your sensitive information and data are secure and confidential, providing compliance documentation when needed

ZenBio has developed a dedicated solutions platform delivering products, services and expertise to assist in the emerging and diverse research field of skin. From initial donor-specific tissue acquisition to full thickness skin testing or 3D skin equivalents—The ZenBio research team accelerates client projects, cost-effectively meets objectives, while minimizing time and resources.



CONFIDENTIALITY
GLP
GUARANTEED DELIVERABLES

Zenskin Cells & Media Solutions

- Matched Donor Sets:
Keratinocytes / Dermal Fibroblast
- Melanocytes
- Hair Follicle
- Sebocytes
- Adipocytes

Dermal Cell Characterization & Profiling

- Cell Proliferation, Gene Expression and Surface Markers
- Mix Donor Lots, Diverse Individual Donor Lots

Dermal Screening & Testing Services

- Cytotox, Collagen Induction, Gene Expression/ Protein Secretion and Western Blotting
- Transfections, Radio Labeled Assays

3d Skin Equivalent Models & Services

- In House Assembly, Validation & Quality Control
- Permeation, Penetration & Irritation Assays

Custom Cell & Tissue Solutions

- Cell Lines
- Explant Cultures
- Custom Procurement
- Fresh / Frozen Skin
- Custom Assay Development

Primary Cells, Tissues & Optimized Media + Processing

ZenBio has extensive expertise in delivering human primary cells and optimized media systems to maximize growth, survival, and expansion in culture. These research assets are authenticated, helping you deliver more biologically relevant results, and providing the foundation for significant and meaningful cell-based discovery. Our wide range of cell systems includes:

- Blood
- Adipocytes
- Adipose-Derived Stem Cells
- Hepatocytes & other Liver Cell Types
- Skeletal Muscle Cells
- Dermal Fibroblasts
- Epidermal Keratinocytes
- Mesothelial Cells
- Mammary Epithelial Cells (Luminal & Basal)
- Pancreatic Islets & Acinar Tissues
- Human & Animal Epithelial Cells

ZenBio also offers human and animal tissues and sera from various anatomical depots. And, as part of your comprehensive ZenComplete offering, ZenBio can provide tissue-processing services using a variety of techniques including:

- Formalin or Alternate Fixatives
- Flash Freezing
- RNA Preservation Solutions
- Other Customized Processing

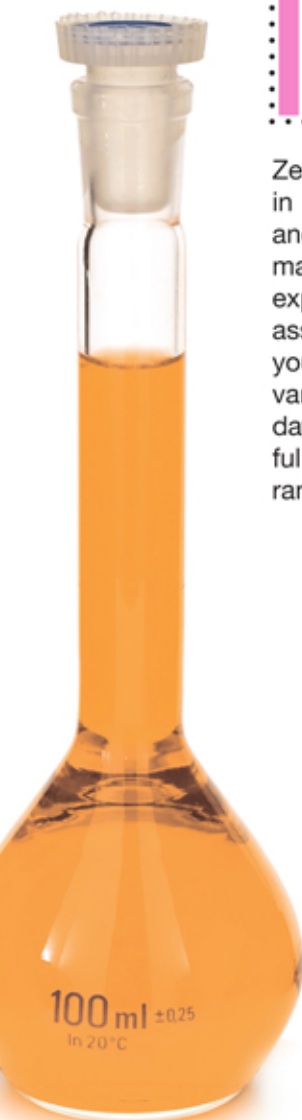
ZenBio tissue products are collected under Institutional Review Board (IRB)-approved protocols with full donor consent—so you can be assured that your research assets have been authenticated.

Diverse Donor Populations & Information for Diverse Needs

ZenBio's products are acquired from a diverse group of donor populations. Products are available from mixed donor lots, individual donor lots, and a variety of disease states, such as Type 2 diabetes, hypertension, and others—including multiple disease states. ZenBio provides a broad array of patient tissues from a host of demographics and disease states through partnerships with surgical teams across the U.S. If samples from the donor demographic you desire are unavailable, ZenBio can custom tailor a solution to suit your needs.

As part of the ZenComplete offering, additional value-added information can often be provided, including:

- Blood Panels
- Disease History
- Current Donor Medications
- Donor Deidentified Medical History



Cell Provision & Formatting for HTS

ZenBio offers extensive cell provisioning experience and capabilities to meet the demands of high throughput screening (HTS) with:

- Low-Passage Cells
- Specifically Optimized Media Formulations
- 96 or 384 Well-Plate Formats
- Cost-Effective Prices Per Well
- Customized Cell Expansion to Desired Cell Number

Not equipped to handle compound or HTS screening? ZenBio can work with you to develop the appropriate assay parameters and carry out the screen to your specifications—helping you gain maximum results with minimum expenditure of time and resources.

In addition, ZenBio's world-class technical support team can work directly with your HTS team or make on-site visits to:

- Deliver Cell-Based Consultations
- Enhance Your Working Knowledge of the Cell Types Being Used
- Enable Your Group to Initiate a Cell-Based HTS Project
- Carry out the Screen and Assess and Troubleshoot Issues as they occur



Gene Expression Profiling & Characterization

The ZenComplete portfolio can help you avoid the cost and maintenance of in-house gene expression profiling and characterization. As a designated ABI-Certified Service Provider, ZenBio can provide these services for you, according to your specific needs. Our state-of-the-art instrumentation and reagents include the ABI 7900 HT platform, with the flexibility to manage a range of customized experimental designs including individual assays, pre-constructed or customized plates,

and TaqMan® Array Cards (96- and 384-well). ZenBio is proficient with quantitative PCR using the TaqMan Genomic Assays platform to:

- Measure Gene Expression
- Perform Allelic Discrimination (SNP Genotyping) Assays
- Score the Presence of Gene Sequences
- Cell-Specific Markers Identification & Characterization

ZenBio can perform TaqMan assays according to your unique specifications, and deliver raw data along with differential expression profiles. Data is captured using the latest SDS software and analyzed with Stat-Miner. ZenBio can also perform MicroRNA profiling.

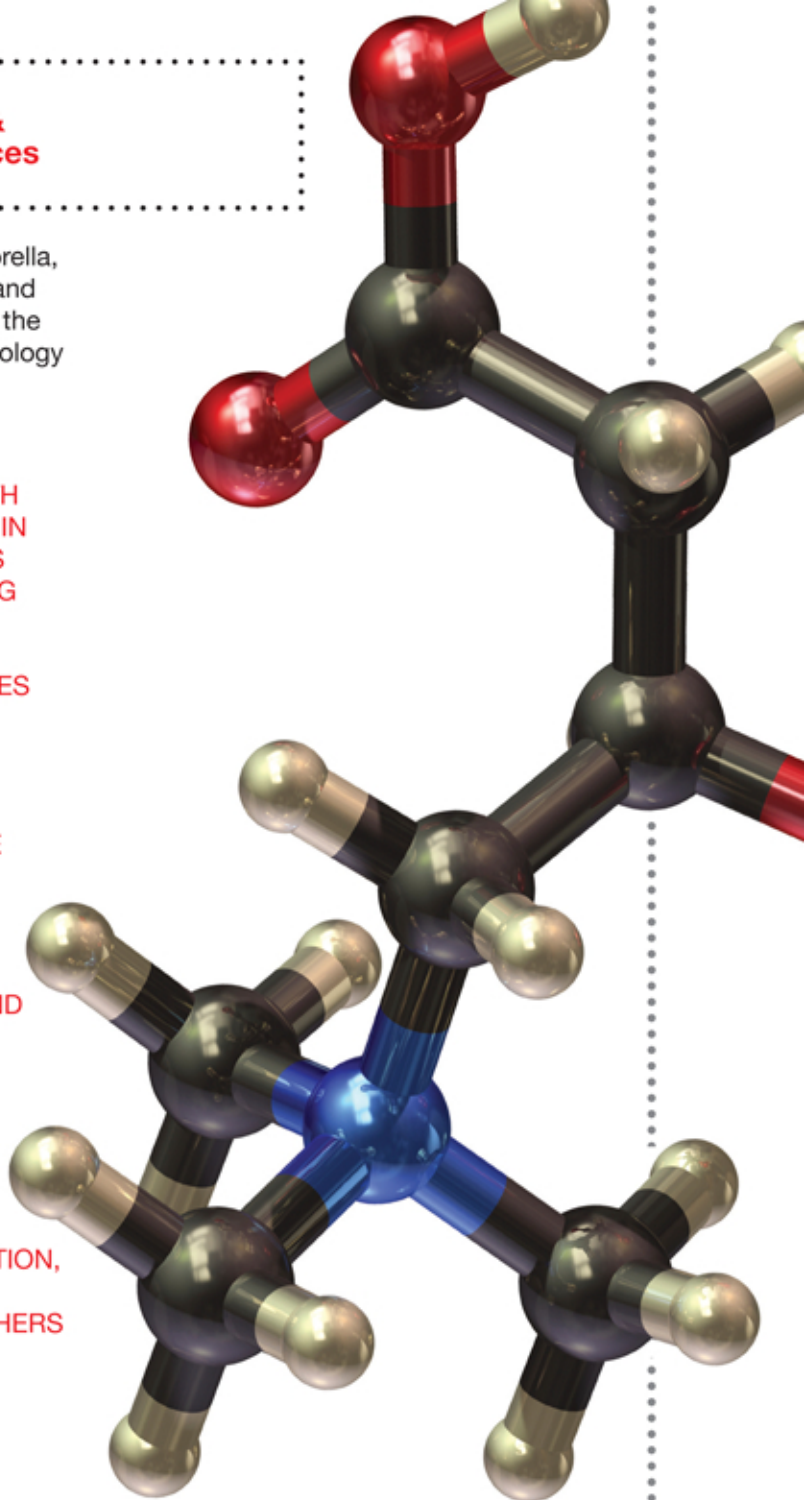
CONTACT ZENBIO FOR DETAILS,
PRICING OR TO CONSULT OUR
SCIENTIFIC TEAM.

ZENCOMPLETE™

Molecular Biology & Biochemistry Services

Under the ZenComplete umbrella, ZenBio also offers products and services customized to meet the unique needs of molecular biology research. These include:

- RNA ISOLATION AND CHARACTERIZATION WITH BIOANALYZER, FOR USE IN REAL-TIME PCR STUDIES AND MicroRNA PROFILING
- WESTERN BLOT ANALYSES USING CELL OR TISSUE LYSATES
- MULTIPLEXED CYTOKINE ANALYSES, OFFERING QUANTIFICATION OF MULTIPLE CYTOKINES PER SAMPLE DERIVED FROM PRIMARY CELL AND TISSUE SYSTEMS
- ELISA AND CUSTOM ASSAY SERVICES, INCLUDING NF- κ B, 11 β -HSD, TNF α SECRETION, PROLIFERATION, CYTOTOXICITY, AND APOPTOSIS, AMONG OTHERS



Research Services:

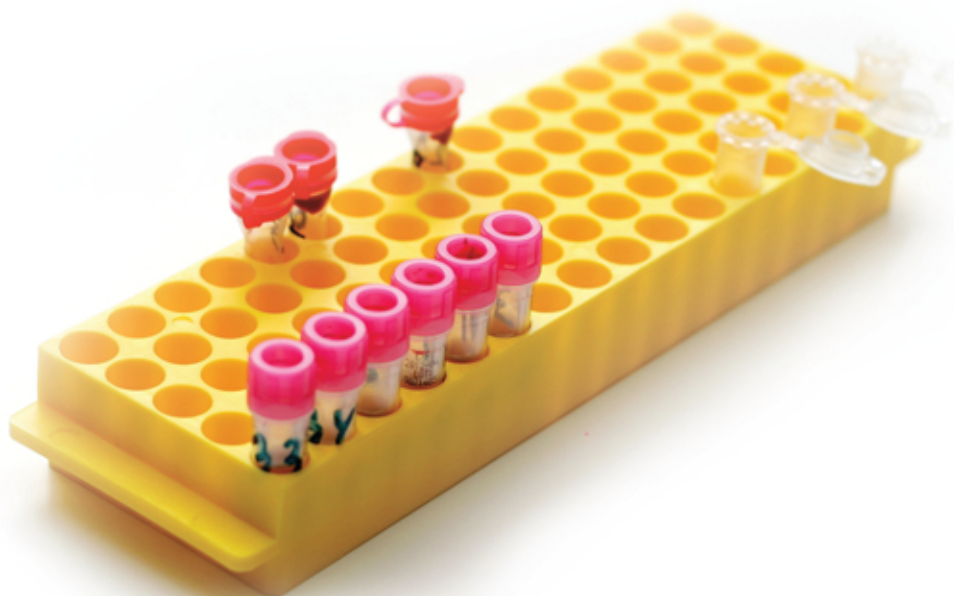
The ZenComplete portfolio offers customized products and services designed to meet the ever-growing needs and constrained budgets of the disease research community. These comprehensive packages can help fill critical research gaps, enabling you to make greater progress towards disease treatment and understanding.

- CYP Profiling
- Phase I/II Metabolism
- Steatosis Induction
- Glucose Secretion
- Glycogen Synthesis

HEPATIC CELLS & SERVICES

ZenBio offers primary human and animal hepatocytes and other non-parenchymal cells as cryopreserved, freshly plated or in suspension. Total liver cell preparations and specific cells such as Kupffer cells and liver stellate cells are also available.

In addition, ZenBio utilizes a Shimadzu Prominence HPLC system for metabolic cell analysis that can easily be performed using our primary cell and tissue systems. HTS or ADME/toxicity screening requirements such as cell provisioning or plate formats are also available. As always, ZenBio can develop a customized solution to meet your unique needs.



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Research Services: (cont.)

HUMAN ISLET CELLS & SERVICES

ZenBio offers human pancreatic islets for important diabetic research. We also provide services for these cells, which are often hard to acquire and difficult to ship and manipulate. ZenBio's islets are derived from donors with varying demographics (e.g. normal, obese, or diabetic) to fit varying research needs. Customized assays can be designed around purified islets or acinar tissue in high throughput (96-well) formats.

SERVICES INCLUDE:

- GLUCOSE-STIMULATED INSULIN SECRETION (GSIS) ASSAYS
- CUSTOMIZED GENE EXPRESSION STUDIES
- ISLET MAINTENANCE
- ANTI-APOPTOSIS ASSAYS
- ISOLATION OF BETA-CELLS FOR CUSTOMIZED ASSAYS OR INTERNAL RESEARCH
- ISLET SCREENING ASSAYS
- RNA ISOLATION
- TOTAL CELL EXTRACT



Research Services: (cont.)**3T3-L1 MURINE SOLUTIONS
& SERVICES**

ZenBio offers low-passage 3T3-L1 murine adipocytes (commonly used as surrogates for human adipocytes) and metabolic disease-related assays and services for stand-alone experiments or for side-by-side comparison of human adipocyte biology. Contract assay services using low passage 3T3-L1 adipocytes are fully customizable and formatted in 96 & 384 well plates to increase throughput.

SERVICES INCLUDE:

- INSULIN-STIMULATED GLUCOSE UPTAKE
- LIPOLYSIS
- TRIGLYCERIDE ACCUMULATION
- GENE EXPRESSION
- PROTEIN SECRETION



ZENCOMPLETE™

Special Customer Requests & Services*

ANTI-INFLAMMATORY ASSAY

- THP-1 Cell $\text{TNF}\alpha$ Secretion Induced by LPS
- A549 Cell IL-6, $\text{TNF}\alpha$ Secretion

PROSTATE CANCER ASSAYS

- PC-3 Cell Proliferation Assay
- LnCaP PSA Secretion Assay – Activation and Inhibition

TRANSFORMATION ASSAY

- Induced Anchorage Independent Growth

CELL TREATMENTS FOR CONDITIONED MEDIUM, PROTEIN EXTRACTS, CELL PELLETS

- Adult Stem Cells

WOUND HEALING ASSAY

TRANSMIGRATION ASSAY

PRIMARY HUMAN DERMAL FIBROBLAST ASSAYS

- Collagen Production
- MTT, Cytotoxicity, Proliferation

OXIDATIVE STRESS

- LDH Secretion in Human Primary Cells

OTHER CELL TYPES

- Human Primary Prostate Cells
- Human Bronchial Epithelial Cells
- L6 Myoblasts
- C2C12 Myoblasts
- HepaRg Cells

CUSTOM TISSUE PROCUREMENT/ CELL ISOLATION

- CD34+ Isolation from Placental Perfusate
- Human Platelet Membranes
- Human Islet Total Cell Extract
- Human Cord Blood-Serum
- Diseased State Human Serum
- RNA from Whole Blood
- Human Hepatic Stellate Isolation

* LISTED ABOVE ARE A FEW EXAMPLES OF CUSTOMIZED SERVICES WE HAVE PROVIDED. IF YOU DID NOT SEE THE SERVICE YOU WERE LOOKING FOR, GIVE US A CALL

To learn more about ZenBio
and the ZenComplete Portfolio
visit us online at:

zenbio.com

Or, contact us today to get started with a custom tailored mix of products and services designed specifically with your research goals in mind. Our goal is to help you achieve your goals—through quality products, premium customer service, and real value—every time.

toll free: **1-866-ADIPOSE**
(1-866-234-7673)

telephone: **(919) 547-0692**
fax: **(919) 547-0693**

e-mail:
information@zenbio.com

