



CONSIDERATIONS FOR CELL THERAPY MEDIA DEVELOPMENT

38% INCREASE GLOBAL CELLULAR THERAPY PIPELINE

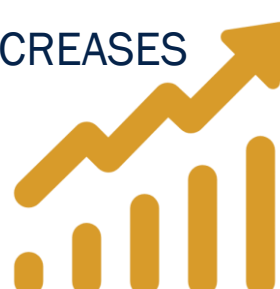
Cell and gene therapy development is advancing rapidly and creates unique challenges due to the complexity of developing processes for delivery of a living therapeutic.

1358 ACTIVE CELLULAR THERAPY TRIALS

Ensuring the **VIABILITY** of collected cells, highest **TRANSFECTION EFFICIENCY**, and **POTENCY** or **CYTOTOXICITY** of cellular therapies should be a top priority during development.

STUDIES SHOW **1** COMPONENT CHANGE IN MEDIA

INCREASES POTENCY TRANSFECTION EFFICIENCY YIELD



67% FASTER THAN TRADITIONAL CUSTOM MEDIA FORMULATION

21 WEEKS FROM FORMULATION TO PIPETTE

SPEED and **SCALABILITY** are critical to success. Nucleus Biologics' proprietary methods facilitate industry leading custom media formulation and manufacturing speed.



2L TO 2000L

SCALE TO MATCH YOUR DEVELOPMENT NEEDS

PRODUCT CONSISTENCY requires robust **QUALITY-CONTROLLED PROCESS** that is adaptable to clinical development. Traditional methods introduce variability that can impact **PROCESS VALIDATION** and complicate **SUPPLIER QUALIFICATION**.



MANUAL MANIPULATION INTRODUCES INHERENT VARIABILITY



CUSTOM COMPLETE MEDIA **READY TO PIPETTE** cGMP QUALITY

+ **1** SUPPLIER TO QUALIFY PROCESS TO VALIDATE

INDEPENDENT CASE STUDY:

DMEM FROM **5** VENDORS

0/5 MEDIA TESTED HAD **SAME** COMPONENT CONCENTRATIONS

14/24 COMPONENTS **DIFFERED** FROM **CofA**

Many complete media are proprietary formulations; thus, **TRANSPARENCY** is limited. With **INDIVIDUAL OWNERSHIP**, you always know exactly what is in your media.

Over the lifetime of therapeutic development custom media can offer **SIGNIFICANT PRICE ADVANTAGES**. Reductions in labor, time sourcing as well as bulk component purchases decrease costs.

ESTIMATED COST:

HIGH COMMERCIAL VOLUME

CUSTOM **\$13M**



OFF-THE-SHELF **\$21M**

5000 PATIENTS **14L** PER PATIENT



EFFECTIVE CELL AND GENE THERAPY STARTS WITH **INTELLIGENT MEDIA**

Finally, an effective custom media that improves performance and consistency begins with **EXPERTISE IN FORMULATION**. Nucleus Biologics has developed innovative systems to facilitate streamlined formulation, customization, and fulfillment of custom media. Formulation can be performed automatically in minutes using proprietary **AI-DRIVEN ALGORITHMS** or through **GUIDED SERVICES** employing the expertise of our in-house R&D team.

