

# Meeting the demand for cells: **overcoming challenges in scaling up cell culture**

Cell expansion is a necessary part of cell culture, whether it be to scale up cells for cell banking or for your current experiments. Various research fields require high quantities of cells, with demand differing based on cell type and application.

Required cell quantities can range from hundreds of thousands to several million or even billions.

Unfortunately, scaling up cell expansion comes with a number of challenges, especially when working with different cell types.

## Challenges of scaling up cell culture



### COSTS

- In-house cell banking can be time-consuming and incur high personnel costs
- Resources such as cell culture plastic, culture medium, reagents and other consumables can be expensive, especially for large-scale cell expansion
- Specialized equipment such as incubators, laminar flow hoods and facilities are costly to purchase, maintain, and operate



### EXPERTISE

Cell type-specific expertise is required for factors including:

- Nutrient requirements (e.g., growth factors, hormones and supplements)
- Culture conditions (e.g., pH, oxygen levels and humidity)
- Extracellular matrix components (e.g., fibronectin, vitronectin or collagen)
- Appropriate passaging and splitting ratio
- Growth kinetics
- Cryopreservation techniques



### QUALITY

- Rigorous quality control is essential to ensure that expanded cells maintain their desired characteristics and functionality, and this can be cost-prohibitive
- Ensuring reliability of cell banking by extensive quality control measures, including cell count, viability assessment and testing for microbial contamination
- Ensuring the consistency and safety of cell expansion processes requires investment in quality assurance and quality management systems, which can be resource-intensive

## Mitigating the challenges



To overcome these hurdles researchers and developers can utilize a cell expansion service.

PromoCell offers a cost-effective, standardized, and quality-controlled cell expansion service that:

- Supports bulk production and custom-specific needs, including additional quality control tests
- Reduces the risk of losing expensive cell batches, eliminates the need for costly equipment, and saves labor
- Leverages expertise in expanding various cell types using state-of-the-art equipment in a quality-controlled setting

