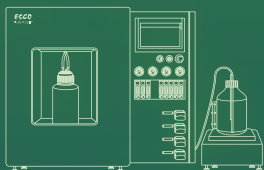


OUR BIOPROCESSING TOOLS:

TIDE MOTION BIOREACTORS



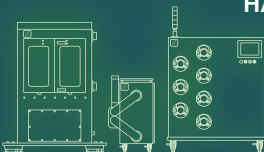
We offer bioreactors from research scale to production or commercial scale for supporting cell growth of adherent mammalian cell lines such as VERO, mesenchymal stromal cells (MSCs), HEK-293T, and more. With the nature of its packed-bed, it provides an *in vivo*-like environment for better cell growth with a higher product yield.

MACROPOROUS CARRIERS



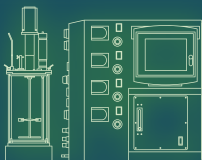
Esco VacciXcell offers cell surface macroporous carriers for culturing anchorage-dependent cells that provide a large surface area for growth and expansion.

HARVESTING SYSTEM



Automated harvesting of both secreted and non-secreted product is made faster with the Tide Motion bioreactors closed harvesting systems. These systems range from bench scale to manufacturing scale to achieve more than 90% harvesting efficiency.

STIRRED TANK BIOREACTORS



Esco VacciXcell provides fermenters/ stirred tank bioreactors for the culture of microorganisms and suspension cells. These complement the Tide motion bioreactors for adherent cells to complete the suite of technologies offered to different types of cell culture systems.



Esco Aster Fermentation (Plasmids)

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Esco AsterTide PD-Phase 2 CTM (Cells/Viruses/EVs)

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Esco AsterMavors Cellular Agriculture and Alternative Proteins (Food)

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Website: www.escoaster.com



One World. One Health.

.....a vertically-integrated contract research (CRO), contract development and manufacturing organization (CDMO) headquartered in Singapore.....



**A Complete List of CDMO Services
and Bioprocessing Tools**



One World. One Health.

We embrace the responsibility of providing cost-effective solutions to your particular needs. We are here to help you every step of the way through:

- An economical reduction on infrastructure cost with our GMP manufacturing space
- A more accessible bioprocessing expertise with our proprietary technologies
- Attaining the production target and demand without the added expense of labor, facility, and more



WE PROVIDE ONE HEALTH-BASED MEASURES FOR:

PRODUCTS:

1. Therapeutic Peptides
2. Cosmetics and Cosmeceuticals
 - a. AsterCura™
 - b. AsterCurone™
3. Specialty Diagnostics

4. Active Pharmaceutical Ingredients (APIs)
5. COVID-19
 - a. Swab booths
 - b. Mobile diagnostic laboratory
 - c. Modular isolation rooms
 - d. Turnkey treatment centers

CDMO SERVICES:

1. By Phase
 - a. Plasmid Modification/Design
 - b. Cell Line Creation
 - c. Cell Line Development
 - d. Strain Engineering/Development
 - e. Master Cell/Microbial Banking
 - f. Preclinical Development
 - Formulation Development
 - Analytical Development
 - g. cGMP Process Development
 - h. Process Transfer
 - i. Clinical Trial Material/Clinical Supply

2. By Modality
 - a. Cell Therapy
 - b. Cellular Agriculture/Alternative Proteins
 - c. Extracellular Vesicles
 - d. Gene Therapy
 - e. Genetically-engineered Cell Therapy
 - f. One Health Vaccines
 - h. Plasmid DNA Manufacturing Services
 - i. Viral Vectors

MANUFACTURING PLATFORMS:

1. Adherent Tide Motion Technology
2. Continuous Fermentation
3. Continuous Flow Chemistry
4. Continuous Granulation
5. AsterMavors™ - Cellular Agriculture/Alternative Proteins
6. Astericle™ - Extracellular Vesicles

