LXMC-dex1 MicroCarrier

The LXMC-dex1 microcarrier is a microbead carrier that can be used for cell attachment growth by bonding diethylaminoethylchloroethane to Seplife G-50 microspheres. LXMC-dex1 microcarrier is one of the most widely used microcarriers at present, and can adapt to more than 60 kinds of cell types, mainly used for the production of vaccines and protein products.

Physical characteristics of LXMC Dex1 microcarriers

Item	Data
Density * (g/ml)	< 1.045
Size (μm)	Dry : 50-100 normal saline: 145-240
Exchange capacity	1.4-1.6mmol/g (dry weight)
Swelling factor* (ml/g dry weight)	17-22
Dry lose weight	< 10%
Microbial content (Colony number /g dry weight)	< 100
Approx No. Of micro-carriers/g dry weight	4.3×10^{6}
* normal saline	

- Transportation:

Avoid sun, rain and heavy pressure during transportation. It is strictly forbidden to mix with toxic and harmful materials.

- Storage: The product should be sealed and stored at 4 ° C ~ 25 ° C, ventilated, dry, clean place6.

Caution: This product is protected from contact with oxidizing agents.

- Shelf lie: 5 years

1. Application:

1.1 Preparation of microcarriers: pH 6.5-7.5 (7.4) PBS (isotonic, without calcium or magnesium ion) swollen microcarriers (50-100 ml PBS/g),
swelling conditions at room temperature at least 3 hours, then repeated washing with fresh PBS (30- 50ml/g), finally added fresh PBS (30-50ml / g), 115 ° C, 15min, 15psi autoclave,
before the end of sterilization, add the medium rinse replacement (20-50ml / g), then add 10% serum for overnight.

1.2 Prepare the well-digested cells, and add the previously prepared microcarriers to the square bottle or reactor (microcarriers add 1-5g/L), start the culture under certain conditions,
and observe the cell attachment after 4 hours.

1.3 If the cells are well attached, continue to follow the culture and observe the growth of the cells.

1.4 Microcarrier culture operation points:

1.4.1 Initial culture: Ensure that the medium and microspheres are at a stable pH and temperature level, inoculate cells (logarithmic growth phase, not stationary phase) to a final volume of 1/3 of the culture medium to increase cells and microcarriers contact opportunity. A microcarrier content of 2-3 g/L is often used, and a higher microcarrier concentration requires a controlled environment or frequent liquid exchange.

Since animal cells have no cell walls and sensitive to shear forces, it is not possible to increase the contact probability by increasing the stirring speed. The usual mode of operation is to use a low agitation speed during the adherence period. After a few hours, when the cells are attached to the surface of the microcarrier, the set low rotation speed is maintained and the culture phase is entered. The agitation of the microcarrier culture was very slow with a maximum speed of 75 r/min.

1.4.2 After the adherent stage (3-8d), slowly add the culture solution to the working volume and increase the agitation speed to ensure complete mixing.

1.4.3 Culture maintenance period: cell count (nucleus count), glucose measurement, and cell morphology microscopy. As the cells proliferate, the microspheres become heavier and heavier, and the stirring rate needs to be increased. After about 3 days, the culture solution began to be acidic. It was necessary to change the solution: stop stirring, let the beads be precipitated for 5 min, discard the appropriate volume of the culture solution, slowly add fresh culture solution (37 ° C), and start stirring again.

1.4.4 Harvesting cells: First drain the culture medium, rinse at least once with buffer, then add the corresponding enzyme and stir rapidly (75-125r/min) for 20-30min. The cells and their products are then dissociated.

1.4.5 Magnification of microcarrier culture: amplification can be performed by increasing the content of the microcarriers or the culture volume. The production of vaccines and interferons using aneuploid or primary cell culture has been amplified to over 4000L.