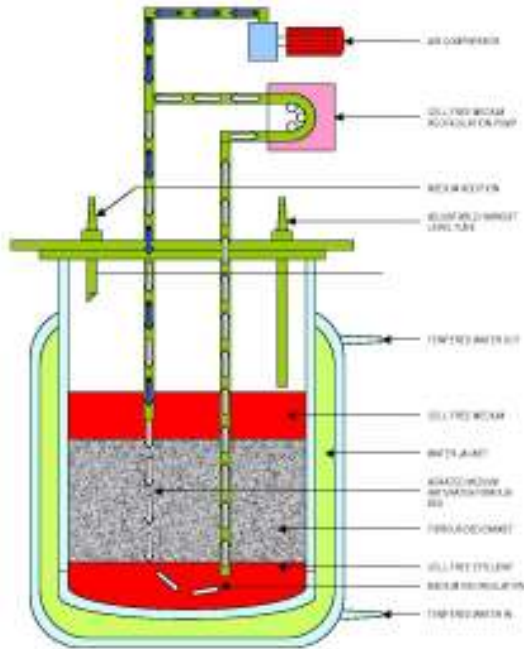


FIBROUS BED BIOREACTOR



The design of cell culture bioreactors is significantly different from industrial bioreactors. Most cells & tissues, especially mammalian, must have a surface or other structural support in order to grow. Agitated environments are often destructive to these cell types & tissues. Higher organisms also need more complex growth medium.

Fibrous bed bioreactors are used for production of both anchorage-dependent & suspension cultures. The fibrous-bed concept offers many advantages over traditional stirred-tank systems. Cells are completely protected from the shear of rotating impellers & sparged gas, while products are easily harvested from the cell-free medium.

Our design of fibrous bed bioreactors employs external recirculation of the cell-free medium, coupled with injection of sterile air into the recirculated medium itself. The oxygenated medium circulates throughout the basket, continuously saturating the cell bed. Since agitation of the medium is totally avoided, the cells are shielded from turbulence; hence they can grow more profusely, giving much higher yields than in suspension.

When products secreted by the cultures are required, the immobilized cells growing in perfusion work as a renewable catalyst for continuous production, as fresh medium washes secreted products into the cell-free environment. As secreted products are automatically separated from the entrapped cells, filtration of cells from the spent medium is also eliminated.

Salient features of our product are as follows :-

1. Available in a variety of sizes
2. Can be used for virtually any application in the culture of animal cells
3. Batch, fed-batch & continuous modes available for growing high-density cell cultures
4. Significantly low lag phase due to rapid adherence of cells on fibrous disks
5. High surface-to-volume ratio of fibrous matrix used provides 3-dimensional growth within the fibers
6. Controls provided for temperature, pH, DO, level, nutrient addition, harvest level & gas flow rate
7. On-line measurement of cell density facilitated using 2 DO probes
8. PC-based process control with SCADA fermentation software available
9. Bioreactor design suitable for facilitating scale-up to commercial levels
10. cGMP-compliant version available
11. Long production runs maintained to increase productivity
12. Easy to operate, clean, & store
13. Low table space required
14. Low noise & vibrations
15. Low power consumption; works on single phase power
16. Low maintenance downtime & cost

Manufactured in India by :-

NAVIN PROCESS SYSTEMS

6, Vaidehi Residency, MIT College Road, Rambaug Colony, Kothrud, Pune – 411 038, India
Tel./Fax : 91-20-25460214 E-mail: info@napro.co.in URL : <http://www.napro.co.in>