

PRESS RELEASE

**Small-scale biomanufacturing benefits from disposable bioreactors ..**

A new technical paper is available from **INTEGRA Biosciences** ([www.integra-biosciences.com](http://www.integra-biosciences.com)) that discusses and compares the use of different types of disposable cell culture systems for the manufacturing of biological products in mammalian cells.

The use of disposable cell culture systems for manufacturing biological products in mammalian cells is advantageous because it facilitates minimisation of necessary validation steps, as well as circumvention of up-front sterilisation and subsequent cleaning steps. Typically in biopharmaceutical development or manufacture of antibody-based diagnostics protein yields of 50-1000 mg are required. To use cell culture systems such as tissue culture flasks, roller and spinner bottles, to attain the target yields, is often rejected because of the extra handling time, space requirements and waste disposal problems associated with using large numbers of disposable culture systems. A more suitable solution is provided by bag-based disposable bioreactors, however working with such equipment requires capital investment in specific equipment and trained personnel.

The paper describes the historical development of two-compartment cell cultivation bioreactors and introduces the advantages of using the **CELLine 1000 bioreactor** for the production of monoclonal antibodies up to yields of 1000 mg. A cost analysis, including the expenses from disposables, equipment amortisation, medium, serum and labour, is presented for the production of 200mg of antibodies comparing the CELLine 1000 with roller bottles and a stirred bioreactor. The analysis demonstrates that total production costs are lowest when the CELLine 1000 is used, and they increase by 60% when using roller bottles, primarily as a result from higher expenses from serum and labour. Below yields of 1g - production with a stirred bioreactor further augments the costs, due to additional labour and equipment amortisation.

The CELLine 1000 bioreactor combines the advantages of high cell densities achieved in two-compartment systems with the ease-of-use of a standard tissue culture flask, resulting in economically efficient biomanufacturing in the 50 –1000mg range. The presented benefits of

monoclonal antibody production with the CELLine 1000 also may be applied to the manufacturing of other biological products such as recombinant proteins and viral vectors, so that any laboratory with basic cell culture expertise can produce highly concentrated, high quality proteins in a cost efficient way.

Further information on the CELLine 1000 and a copy of the technical paper may be obtained directly from INTEGRA Biosciences by telephone +41-81-286-9530 or emailing [fabrizio.baumann@integra-biosciences.com](mailto:fabrizio.baumann@integra-biosciences.com).

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**Illustrative image:** (image file on request)



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