Hybrimune™

ADVANCED ELECTROFUSION FOR MAXIMUM EFFICIENCY CELL FUSION

The BTX Hybrimune™ System is an advanced electrofusion solution for fast, efficient cell fusion in hybridoma production, hybrid cell formation or nuclear transfer applications. The Hybrimune™ system includes an innovative fusion chamber design, proprietary BTXpress Cytofusion® medium and sophisticated, tri-phasic electric field pulses that quickly position cells and disrupt cell membranes for maximum cell fusion efficiency with short cycle-times and minimal heating or turbulence for excellent cell viability.

Cells are combined in the proprietary BTXpress Cytofusion® medium C and transferred to the coaxial fusion chamber under sterile conditons. A tri-phasic sequence of programmed pulses is applied. First, an AC waveform positions the cells into "pearl-chain" alignment using dielectrophoretic force. A gradual increase in AC amplitude compresses the cells for maximal cell-cell contact. Then, a short, robust DC pulse porates the cell membranes to permit cell content exchange and cell fusion. A final AC waveform holds the cells in place a

Hybrimune™ TECHNICAL SPECIFICATIONS

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The Hybrimune™ System is ideally suited for fast, efficient electrofusion of human dendritic cells with human tumor cells removed from a patient to produce a personal immunotherapeutic vaccine against a tumor. The E-Fusion process is similar to that used for hybridoma production (see above for details). The picture on the right shows the remarkable 10% efficiency of electrofusion of dendritic cells with A549 human lung carcinoma cells. Cells were fused at a concentration of 8 million cells/ml.

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HYBRIMUNE™ ELECROFUSION SYSTEM INCLUDES

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WAVEFORM SPECIFICATIONS

The Hybrimune™ Waveform Generator is programmed using the Application Software.

The following parameters are available:

;%2 ; ' 7#)	Constant, linear, non-linear
;%2 & +%#7;	100-1000 V
;%2 # 7! '	20 – 1000 ms
7 07 $ '	5-75 V
7) + $ '	5-75 V
0 / ; ' ?	0.2 to 2.0 MHz
;0 7#	0 to 60 sec

FUSION CHAMBER SPECIFICATIONS

The optimization and production chambers have been engineered to have identical electrical characteristics to facilitate direct scale-up to production once pulse parameters have been optimized. In addition the small chamber has a transparent bottom to permit visualization of the cell alignment by inverted or regular microscope.

0 & 7 0	+ 7#&#@7#) ! & 0	0) ; 7# ! & 0
) %&	2 ml	9 ml
; 70	45.72 mm	45.72 mm
' ' 0	38.10 mm	38.10 mm
+	3.81 mm	3.81 mm
%%# !7	5 mm	18 mm
' ' 05 ;7 0 #; 2	0.8333	0.8333

For reuse, the fusion chamber can be cleaned with NaOH, sterilization by EtOH, and Spor-Klenz® for spores and mycoplasma.

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The use of the Hybrimune as a commercial and therapeutic system requires a license from Cellectis. Please contact BTX for more information.

Cytospin is a Trademark of Shandon Inc.

TECHNICAL & CUSTOMER SERVICE

For further references regarding specific applications and optimization, please contact BTX Technical Support:

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If outside the United States or Canada: call A " (8" (((
or contact your nearest BTX Distributor.

BTX®
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The Electroporation Experts

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