

A bright sun is rising over a range of snow-covered mountains. The sun is positioned in the upper center of the frame, creating a strong lens flare effect with multiple rays extending across the sky. The sky is a clear, pale blue. The mountains in the foreground and middle ground are covered in snow, with some areas appearing darker due to shadows. The word "Limbo" is overlaid in a blue, sans-serif font, centered horizontally and partially overlapping the sun and the mountain range.

Limbo

- ▶ Cells can be frozen and stored in advance for rapid development in response to an epidemic using cell based vaccine technologies.
- ▶ Large stockpiles of cells are a key factor in minimizing the time spent for seed-train development in recombinant protein and MAbs production.
- ▶ Cryopreservation is the gold standard process for cell storage, however successful cryopreservation approaches to store large amounts of cells in a reduced space remain elusive.



Let your cells rest assured in **Limbo**

- ▶ **Limbo**[™] is a proprietary freezing technology that enables the successful cryopreservation of bulk amounts of cells in a minimum space.
- ▶ Since very large amounts of cells can be ready to use upon thawing, this technology permits forward planning in your bulk cell production.
- ▶ Storage of your precious cells for future use not only improves assay performance but also saves time and costs associated with cell culture production.



Benefits of using Limbo

- ▶ Reduction of cryo-storage space
- ▶ Reduction of cryoprotectant related cytotoxicity
- ▶ Reduction of osmotic shock
- ▶ Standardization of freezing/thawing procedures
- ▶ Excellent post-thawing viability rates



Main Applications

- ▶ Production of seasonal and pandemic influenza vaccines reducing lead times.
- ▶ Bioreactor inoculation for production of recombinant proteins and MAbs.
- ▶ High density cell banks eliminate the need for scheduling of large cell batches in drug screening campaigns and avoid batch to batch variations.
- ▶ Final product formulation for cell therapy applications.
- ▶ Cell banking, providing a small footprint and good freezing/thawing standardization procedures.



A photograph of a bright blue sky filled with various types of clouds. There are large, fluffy white clouds, some with soft, greyish undersides, and smaller, more wispy clouds. The lighting suggests a clear, sunny day.

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