

UNICAN: DUAL CAPABILITY IN SINGLE USE BIOREACTORS

Ekta Mahajan, GENENTECH, USA
EKTAM@GENE.COM

Disposable technology is being used more each year in the biotechnology industry. Disposable bioreactors allow one to avoid expenses associated with cleaning, assembly and operations, as well as equipment validation. However, one of the biggest challenges for single use technology including single use bioreactor is single sourcing of consumables. Typically, the consumables are tied to the hardware eliminating the flexibility and interchangeability among existing systems, which ultimately forces the end user to rely on a single vendor's supply chain. In order to address to this challenge, a 200L bottom mounted single-use bioreactor was converted into a universal can, or "Unican", which supports the use of both bottom mounted agitator and top mounted agitator single use bioreactors. The implementation of Unican increases flexibility for cell culture operations, improves assurance of supply, allows handling of any bag film changes/issues in future and reduces the dependence on single suppliers. As part of the project, mass transfer and cell culture experiments were performed to ensure optimal performance of both bags in the Unican. Cell Culture data and mass transfer was shown to be comparable in both top and bottom mounted bags with historical data. Additionally, the modification of system was performed such that no hardware requalification was required post-modification. The system has been successfully implemented in pilot plant for bioprocessing.