IMPROVED DYNABEAD REMOVAL USING DESIGNED-FOR-PURPOSE BIOPROCESS CONTAINERS

Tony Hsiao, Thermo Fisher Scientific
tony.hsiao@thermofisher.com
Tor Espen, Thermo Fisher Scientific
Lars Norderhang, Thermo Fisher Scientific
Nephi Jones, Thermo Fisher Scientific

Key Words: CAR-T Cells, Dynabead, Cell Therapy, Single-Use

The recent FDA approval of a CAR-T cell based therapy has been an important milestone for progress in how we collectively can target and treat diseases. A key tool in these therapies have been Dynabeads for selection and activation of target cells. One important workflow step is the removal of Dynabeds after their use and prior to patient administration of cells.

To further improve Dynabead removal outcomes for users of the DynaMag CTS system, we have endeavored to create a bioprocess container (BPC) with improved Dynabead retention characteristics. This bag leverages existing film and manufacturing expertise from Thermo Fisher Scientific that have been extensively used in the biopharmaceutical industry over the past decade. Fundamentally, this designed-for-purpose BPC increases the flow path of fluid over the DynaMag to provide longer exposure to magnetic fields. This in turn provides for superior Dynabead removal from the fluid when compared to standard bags without this design as demonstrated in Figure 1.

These designs are easily incorporated into standard cell processing steps and compatible with existing single-use, closed-system workflows via sterile welding or aseptic connectors. The outlined BPC provides another tool for maintaining quality and repeatability in the inherently variable landscape of autologous T-cell therapy.

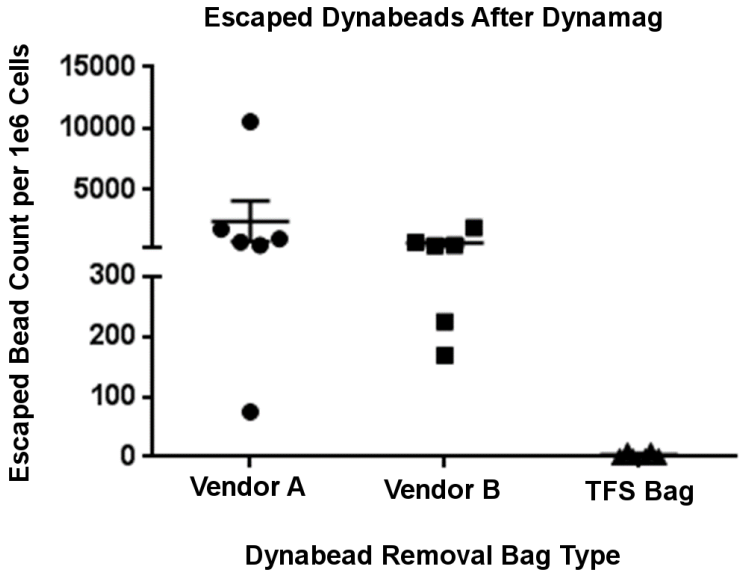

Figure 1 – Dynabead removal performance of Thermo Fisher Scientific BPC compared to other vendors