

High Purity Plasma CD138⁺ Cell Isolation straight from Whole Blood

INTRODUCTION

Characterization of Plasma Cells in Bone Marrow (BM) for cytogenetic abnormalities is a common genetic test to diagnose and monitor multiple myeloma (MM). Plasma cells in MM patients vary in proportion from <1% up to 100%. Even though Circulating Plasma Cells (CPCs) burden in peripheral blood is reported to be >100-fold lower than in BM, their presence is considered an important prognostic marker in patients with MM, with a less invasive sample collection. However, the time-consuming sample preparation steps and the considerable loss of cells during the process is still a significant challenge. The **MARS[®]platform** addresses it through an easy method to isolate CD138⁺ plasma cells from peripheral blood without RBC lysis and density gradient centrifugation.

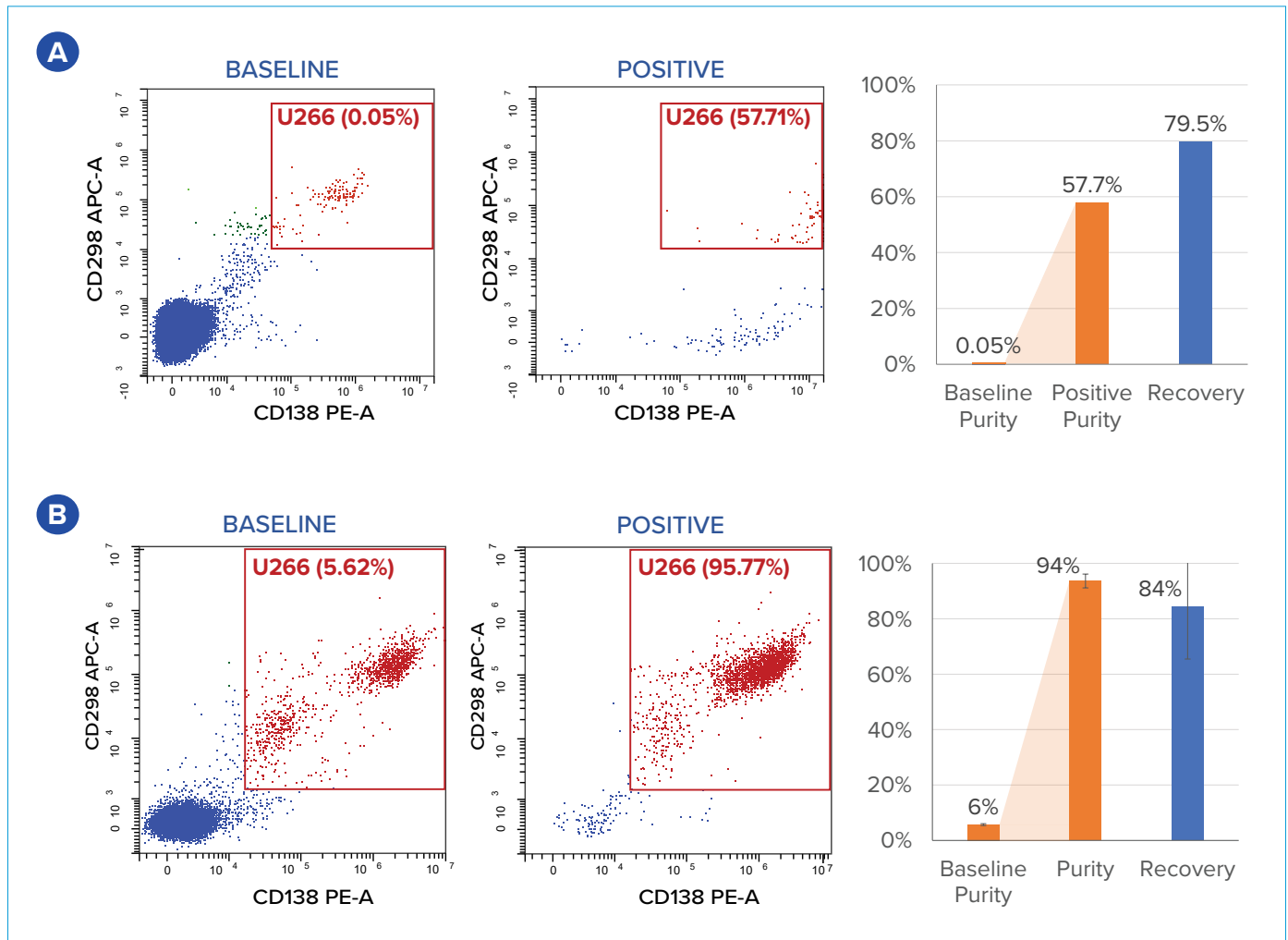
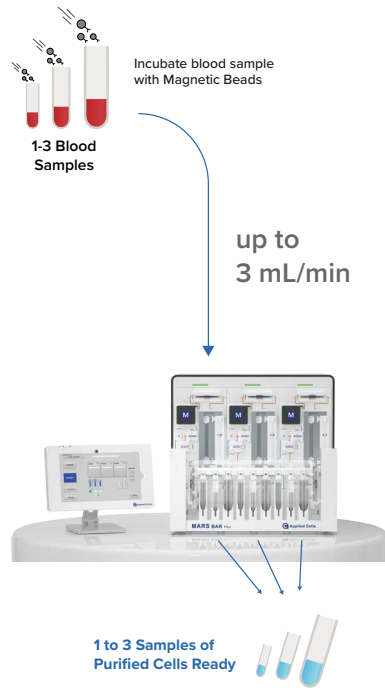


Figure 1. U266 cell line cells were pre-stained with CD298 APC and spiked in healthy donor's whole blood at the frequencies of (A) 0.05% and (B) 5.6% of all white blood cells. Various dilution ratios were compared by assessing the purity of isolated cells and separation efficiency, and we achieved high purities and recoveries: (A) 57.7% purity and 79.5% recovery and (B) 94% purity and 84% recovery. The purity can be further improved by re-running the sample on our column-free module.

EASY ASSAY UPSCALING

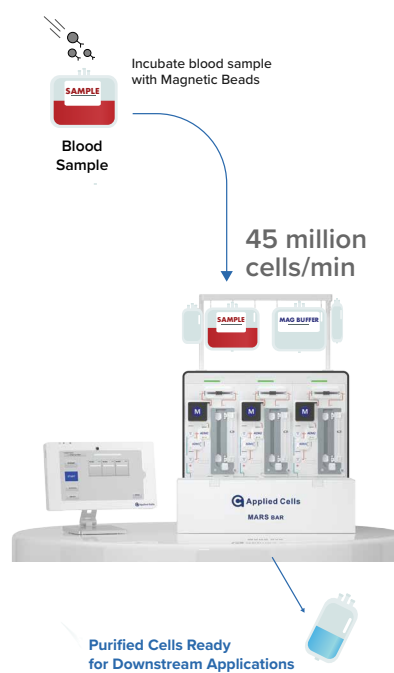
STEP 1

Optimise the assay in a small scale, starting at 300 μ L / sample



STEP 2

Upscale the assay to achieve highest purity in a cost-effective manner



Using MARS® Bar platform ensures:

- ☑ Very high **purity and** very high **recovery** even at **very low starting concentrations**
- ☑ **Easily** rerun the sample to **improve purity**
- ☑ **Easy upscaling**
- ☑ **Fast and Simple** workflow (up to 6ml / min)
- ☑ **No magnetic column** costs
- ☑ **Intuitive**, touchscreen interface
- ☑ Low consumables **cost**, low reagent **consumption**

MARS® Bar family offers both, a small scale system (TITO) for easy assay optimization of up to 3 samples in parallel, and a fully enclosed bag-in-bag-out (BIBO) configuration for high performance, sterile cell processing and culturing.

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