Miltenyi Biotec

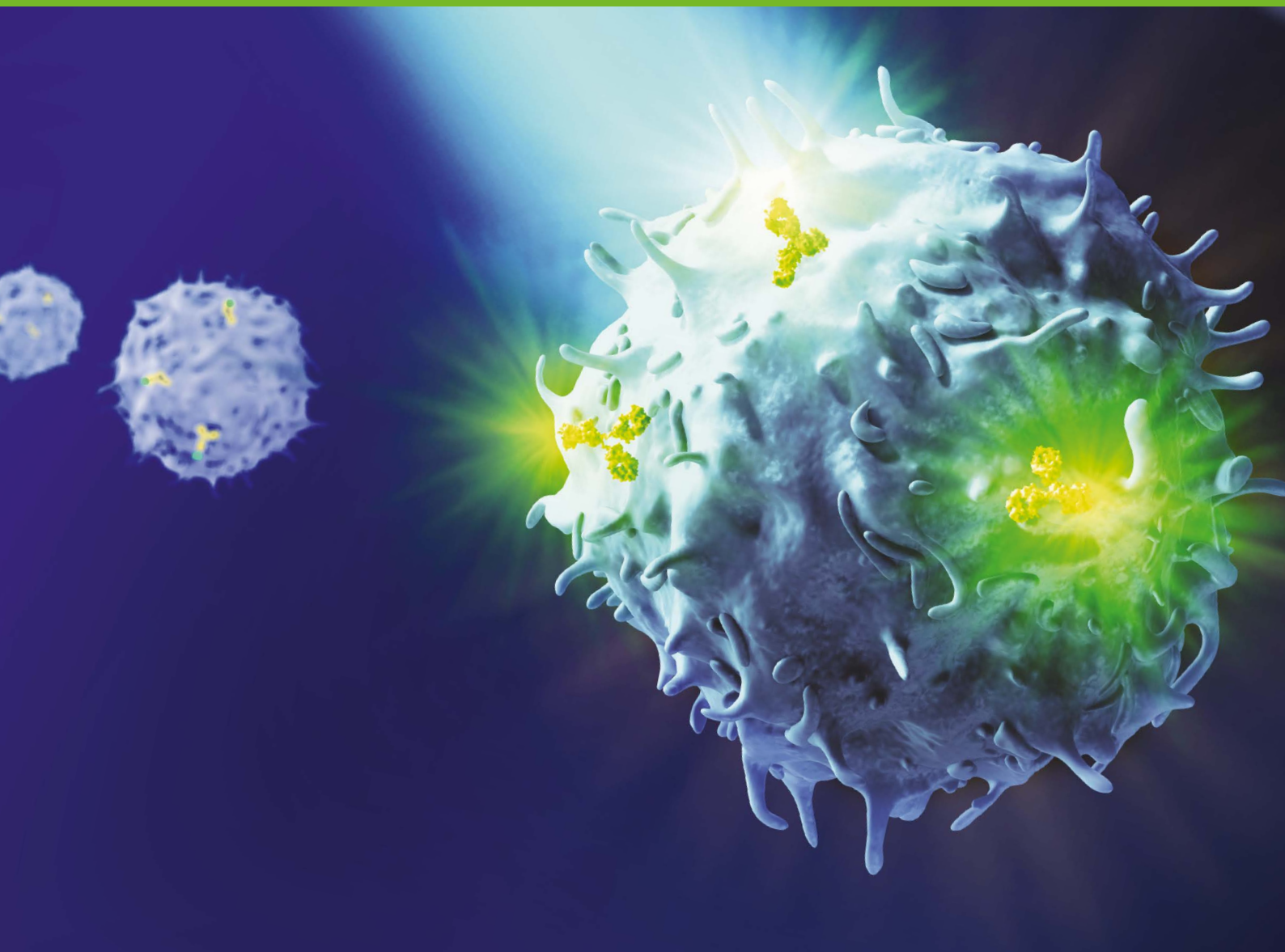
MSC Phenotyping Kit, human

Confirm compliance with ISCT criteria

This kit was developed for the rapid and standardized characterization and quantification of cultured human mesenchymal stromal cells (MSCs) by flow cytometry based on the defined standards of the International Society for Cellular Therapy (ISCT)[1]. The MSC Phenotyping Kit applies REAfinity® Recombinant Antibodies for fast, trouble-free, and reliable phenotyping.

- **5-color antibody cocktail detecting MSC-positive markers (CD73, CD90, and CD105) and -negative markers (CD34, CD45, CD14, CD19, and HLA-DR)**
- **5-color antibody cocktail for isotype control**
- **Individual single-color fluorochrome-conjugated antibodies for compensation control**

▸ **miltenyibiotec.com/MSC**



Confirm compliance

The Mesenchymal and Tissue Stem Cell Committee of the ISCT has proposed a set of standards to define human MSCs for both laboratory-based scientific investigations and for pre-clinical studies[1].

These MSC-defining criteria are:

- plastic-adherence when maintained under standard culture conditions
- postivity (≥ 95% of the cell population, when measured by flow cytometry) for CD73, CD90, and CD105, while lacking expression of CD34, CD45, CD11b or CD14, CD19 or CD79α, and HLA-DR (≤ 2% positive cells, when measured by flow cytometry)
- ability to differentiate into adipocytes, chondrocytes, and osteoblasts under standard *in vitro* differentiation conditions

By defining these criteria, ISCT has provided guidelines to improve the reliability of inter-investigator comparison of results, which can accelerate scientific discovery and facilitate the development of novel cellular therapies.

Comprehensive MSC reagent portfolio

Miltenyi Biotec has developed a comprehensive reagent portfolio to standardize cultivation and characterization of MSCs. Find all relevant products you need to ensure compliance with the MSC identification criteria in the table below.

Product	Capacity	Order no.
MSC Phenotyping Kit, human	50 tests	130-139-763
StemMACS™ MSC Expansion Media Kit XF, human	500 mL	130-104-182
StemMACS MSC Expansion Media, human	500 mL	130-091-680
MSC-Brew GMP Medium	500 mL	170-076-326
MSC-Brew GMP Medium	2000 mL	170-076-325
StemMACS AdipoDiff Media, human	100 mL	130-091-677
StemMACS OsteoDiff Media, human	100 mL	130-091-678
StemMACS ChondroDiff Media, human	100 mL	130-091-679
MSC Suppression Inspector, human	2.5 mL	130-096-207

Information about the complete range of products for MSC research is just a click away on **www.miltenyibiotec.com/MSC**

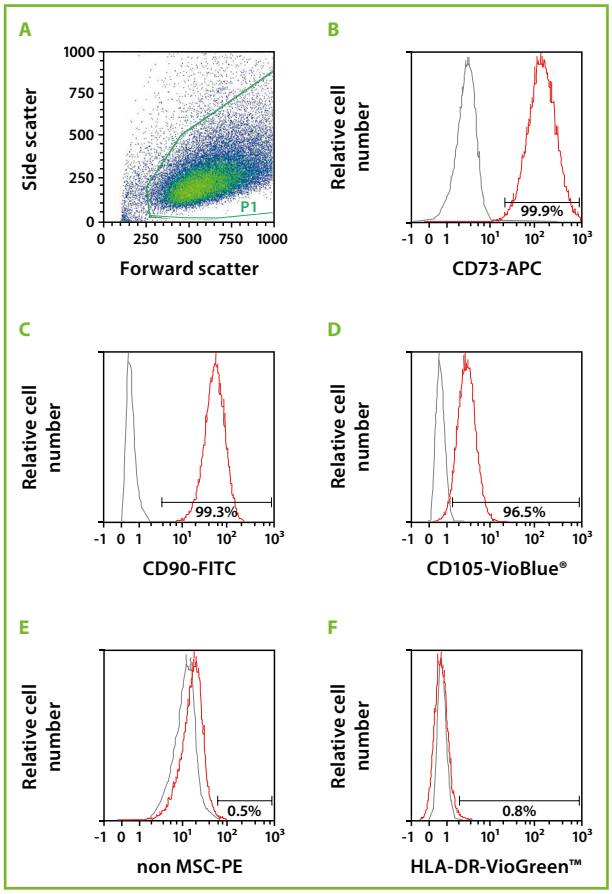


Figure 1: Human MSCs were cultured and expanded in StemMACS™ MSC Expansion Media Kit XF, human. Cultured cells were divided into two aliqouts, and stained with the MSC Phenotyping Cocktail and the Isotype Control Cocktail, respectively. Both fractions were analyzed by flow cytometry using a MACSQuant® Analyzer. Each histogram (red) was overlaid with the corresponding isotype control (grey) to identify positively stained cells (A–F).

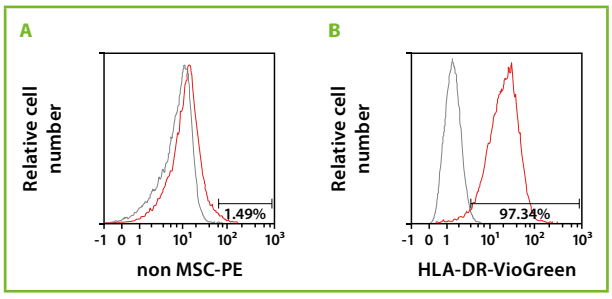


Figure 2: In order to distinguish stimulated MSCs from unstimulated MSCs, cells were cultured with IFN-γ and the expression of HLA-DR and other MSC-negative markers was investigated. Upon stimulation with IFN-γ, the HLA-DR expression was upregulated (B) compared to unstimulated cells (Figure 1F). Meanwhile, the expression of other MSC-negative markers was comparable between stimulated (A) and unstimulated MSCs (Figure 1E).

Reference:

1. Dominici, M. *et al.* (2006) Minimal criteria for defining multipotent mesenchymal stromal cells. The International Society for Cellular Therapy position statement. Cytotherapy 8: 315–317.

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