Primary Rat Bone Marrow Mononuclear Cells (BMMC)

SKU: CDS11331 | Category: Primary Cells — Rat

Validation & Biomarker Data Guide · Lineage classification: Mesenchymal stem/stromal cell (MSC)

1. Product Overview

Primary Rat Bone Marrow Mononuclear Cells (BMMC) is a primary cell product from rat Bone marrow for physiologically relevant in vitro studies. The product is particularly relevant to Skeletal cell series and Skeletal, articular and cutaneous systems research. It can support research in cell physiology, signaling, metabolism, toxicology, drug response and cell-based assay development where a primary-cell model is preferred. Culture and passage conditions should follow the product-specific protocol. For research use only.

Primary tissue / source: Bone marrow | Growth type: Adherent Cells | Tumorigenic status: Normal Cells | Pack size: 1 x 0.5 million cells

2. Typical Applications

- Skeletal cell series
- Skeletal, articular and cutaneous systems
- Mononuclear cells

3. Identity & Phenotypic Marker Panel

A representative identity panel for mesenchymal stem/stromal cell (msc) products is shown below. Actual per-lot Certificates of Analysis should be consulted for verified identity data.

Marker	Expected Result	Range
CD73	Positive	90–100% positive
CD90	Positive	90–100% positive
CD105	Positive	85–99% positive
CD34	Negative / low	≤3% (background)
CD45	Negative / low	≤3% (background)
HLA-DR	Negative / low	≤3% (background)

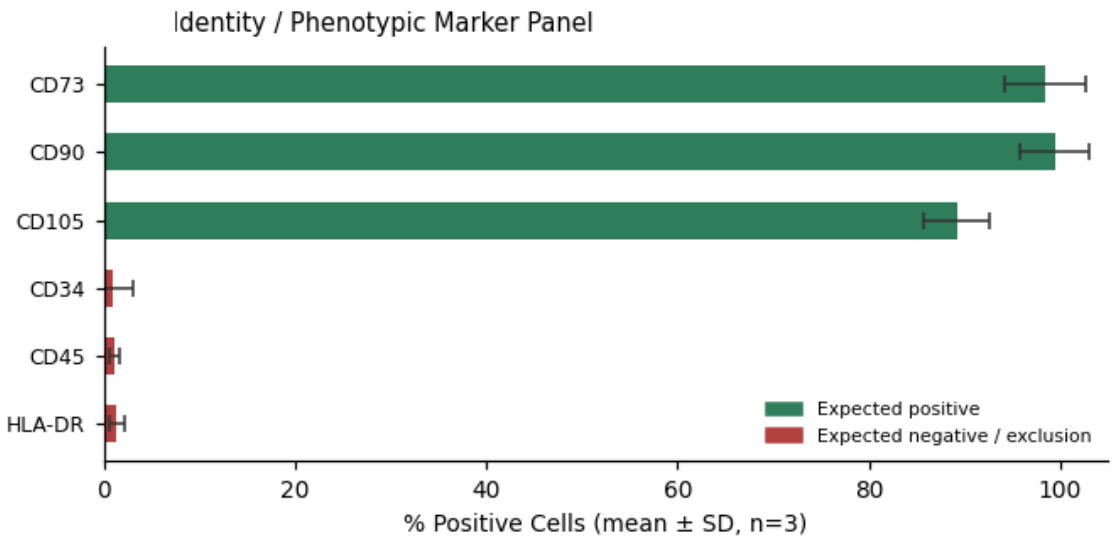


Figure 1. Marker expression profile (mean ± SD, n = 3 replicates).

4. Growth Kinetics & Viability

Growth and viability trends over 120 hours in standard culture conditions.

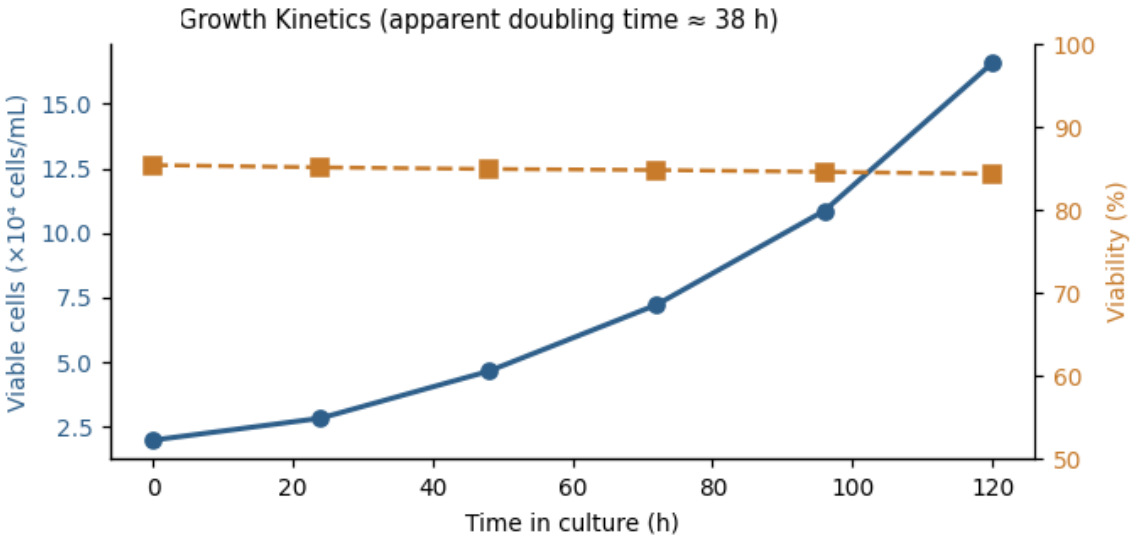


Figure 2. Growth curve (viable cell density, left axis) and viability trend (right axis).

5. Functional Validation Assay

Tri-lineage differentiation assay: Osteogenic (Alizarin Red), adipogenic (Oil Red O) and chondrogenic (Alcian Blue / Collagen II IHC) differentiation confirming multipotency per ISCT minimal criteria.

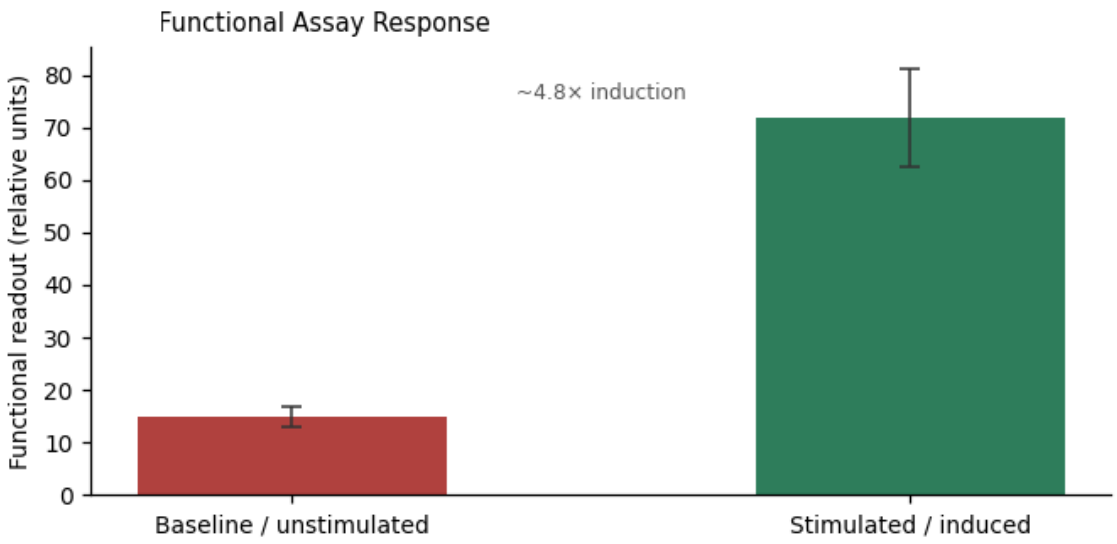


Figure 3. Functional assay readout — ~4.8× induction over baseline.

6. QC Acceptance Criteria

Acceptance Criterion	Result
≥95% positive for CD73/CD90/CD105	PASS
≤2% positive for CD34/CD45/HLA-DR	PASS
Confirmed tri-lineage differentiation potential	PASS
Apparent population doubling time	≈ 38 hours
Functional assay outcome	~4.8× induction over baseline

7. Handling & Culture Notes

- Refer to the product-specific Certificate of Analysis and datasheet for validated culture medium, seeding density, and passaging recommendations.
- As with any primary cell or cell line, confirm mycoplasma-negative status, expected morphology by phase-contrast microscopy, and viability by trypan blue or equivalent dye-exclusion assay at each passage before use in downstream assays.