# Certificate of Analysis

**Sprague-Dawley Rat Mesenchymal Stem Cells**

Catalog No. RASMX-01001
Lot Number:120305E01

Cryopreservation Date: 2012-03-05
Passage Number: 2

## Viability

Cells are assayed for viability post-thaw using vital staining assay with trypan blue.
Specification: Cells should exhibit ≥ 80% viability.

## Sterility

Bacterial and Fungal Contamination: Samples are inoculated and cultured in blood agar plate, thioglycolate broth, tryptocase soy broth and sabouraud dextrose agar.
Specification: No growth must be observed.

Mycoplasma: Samples are tested for mycoplasma contamination using a PCR-based assay and direct culture.
Specification: Results must be negative.

Endotoxin: Samples are tested for endotoxin contamination with LAL test.
Specification: Results must show a concentration of ≤ 25EU/ml.

## Purity

Cells are assayed for purity using flow cytometric analysis of cell surface antigen expression after cryopreservation. Cells are immunofluorescently stained with fluorochrome−conjugated antibodies specific to cell surface antigens CD29, CD34, CD44, CD45, CD90 and CD11b.
Specification: Cells must show ≥ 70% positivity for expression of cell surface antigens CD29, CD44 and CD90. Cells must show ≤ 5% positivity for expression of cell surface antigens CD34, CD45 and CD11b.

## Proliferation Ability

Cells are characterized by their ability to proliferate in culture with an attached well-spread morphology for ≥ 5 passages, and ≤ 5% cells exhibit spontaneous differentiation in each passage.

## Differentiation Ability

Cells are assayed after cryopreservation for their ability of tri-lineage differentiation. Cells must be able to differentiate to osteocytes, adipocytes and chondrocytes when cultured in the appropriate differentiation media.

**Results:**
All specifications have been met.

Jane Chen
QA Manager
May 25, 2012