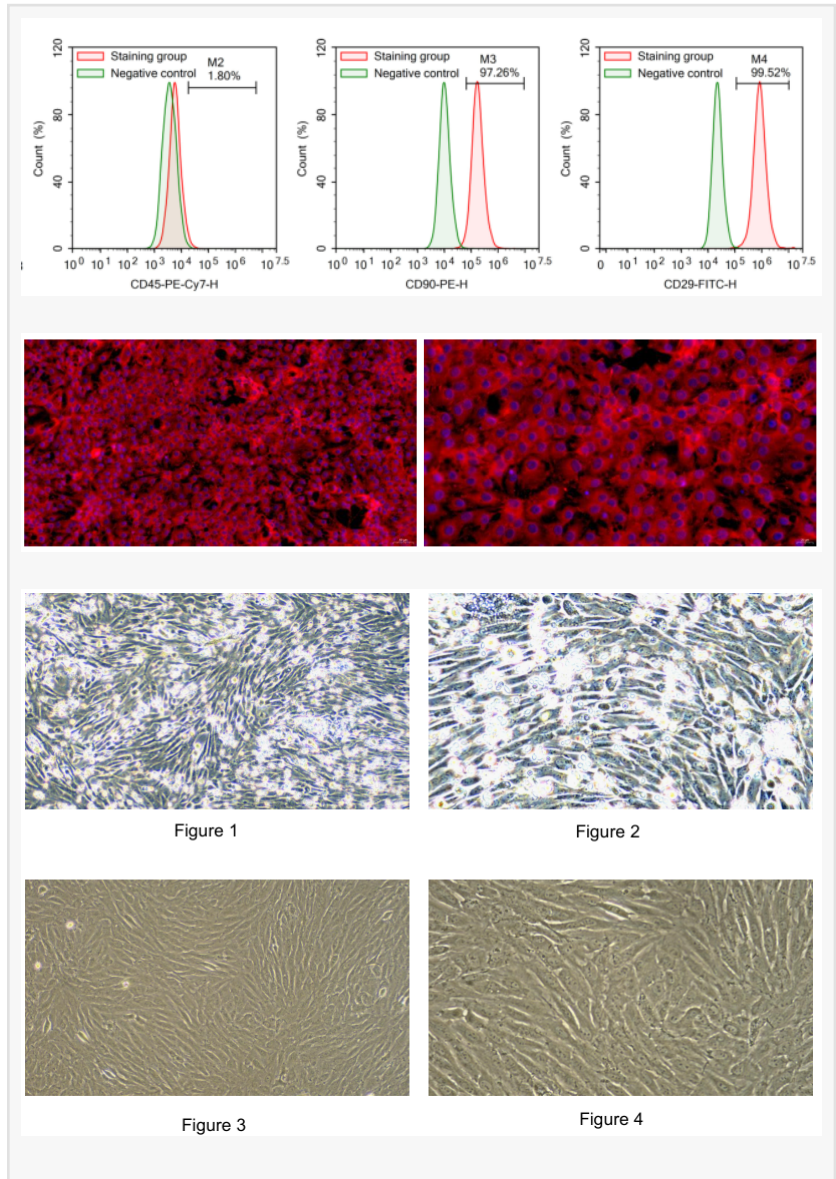


Low-Passage Mesenchymal Stem Cells from Cloud-Clone Empower Global Scientific Research

Cloud-Clone Low-Passage MSCs Power Full Pipeline for Degenerative Disease Research & Novel Cell Therapeutics

HUSTON, TX, UNITED STATES, August 17, 2026 /EINPresswire.com/ -- Against the backdrop of rapid advances in life sciences and cell-based biomedicine, primary cells serve as the fundamental core raw material for drug screening, pathological mechanism elucidation and tissue regeneration research. Primary mesenchymal stem cells (MSCs) stand out as a critical category that overcomes the limited passaging capacity of conventional terminally differentiated primary cells and bridges basic research with preclinical translational studies. With nearly 20 years of dedicated expertise in [primary cell](#) development, [Cloud-Clone](#) has completed full technological iteration covering common primary cells up to premium primary mesenchymal stem cells via its in-house animal facility, building a comprehensive portfolio of stem cell products derived from all species and tissue types.



I. Rooted in Primary Cell Research: Establish a Solid Foundation for High-Quality Cell Development

Primary cells are isolated directly from fresh living tissues, retaining native gene expression and physiological functions to the maximum extent, delivering far more authentic experimental data

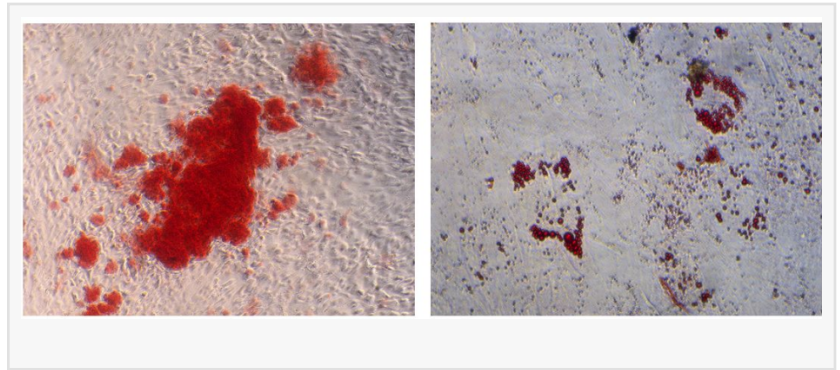
and superior biosafety compared to immortalized cell lines. Cloud-Clone controls quality at the source with an in-house nearly 1,000 m² SPF (Specific Pathogen Free) animal center that guarantees fully traceable animal strains and genetic information.

Custom culture systems are developed for over 560 types of conventional

primary cells including cardiomyocytes, neurons, hepatocytes and epithelial cells, with precisely formulated growth factors and signaling modulators to resolve common drawbacks of commercial primary cells such as low viability, restricted passaging and phenotypic drift.

Products cover all mainstream laboratory species including human, mouse, rat, rabbit, dog, cat, pig and guinea pig.

Most conventional primary cells are terminally differentiated with permanently fixed physiological functions: they can only be passaged 1–3 times after isolation, with almost no in vitro expansion capacity and are impossible for mass production. Lacking multipotent differentiation potential, they cannot support tissue injury repair. Among all primary cell lineages, primary mesenchymal stem cells break through these limitations. They inherit the inherent strengths of primary cells including high biological fidelity, no genetic aberration and non-tumorigenicity, while possessing exclusive stem cell proliferation and tissue regenerative capabilities.



II. Primary Mesenchymal Stem Cells from Cloud-Clone: A Versatile Benchmark for Primary Cell Systems

Cloud-Clone primary mesenchymal stem cells are isolated from compliant, high-quality native tissues including umbilical cord, placenta, bone marrow, adipose tissue and synovium. All products originate from primary isolation rather than modified immortalized cell lines. These MSCs exhibit high positive expression of surface markers CD73, CD90, CD105, CD29 and CD44, alongside negative expression of CD34, CD45, CD19 and HLA-DR. Complete surface marker identification confirms high purity with no mixed somatic cells or pathogenic contamination.

Figure 1. Flow cytometry identification of surface markers on rat bone marrow mesenchymal stem cells

Figure 2. Immunofluorescence identification of surface marker CD90 on rat synovial mesenchymal stem cells

Low-passage primary MSCs supplied by Cloud-Clone feature four core competitive advantages:

1. Stable Large-Scale Expansion

Conventional terminally differentiated primary cells cannot expand in vitro with limited yield per isolation, which severely restricts high-throughput pharmacodynamic testing and in vivo animal experiments. Cloud-Clone low-passage primary MSCs can be stably passaged for up to 10

generations, maintaining consistent karyotypes without chromosomal mutation or tumor transformation risk. Post-thaw cell viability remains consistently above 85%. The platform supports standardized large-scale cell preparation and cryopreserved cell bank storage, with dual supply modes of off-the-shelf products and custom preparation. This fundamentally addresses global industry pain points including difficult cell isolation, unstable supply and inconsistent batch performance.

Figure 3. Morphology of rabbit bone marrow mesenchymal stem cells on Day 3 of primary culture and P2 generations

2. Broad Multipotent Differentiation Capacity

Unlike restricted conventional primary cells without regenerative potential, Cloud-Clone primary MSCs possess extensive multipotent differentiation capability. They can be controllably induced to differentiate into functional somatic cells including osteoblasts, chondrocytes, myocytes, adipocytes and vascular endothelial cells, replenishing necrotic or missing cells and reconstructing damaged tissue and organ structures.

For research modeling of chronic conditions such as heart failure, joint degeneration, cerebral ischemic injury and organic hepatic/renal lesions, MSCs overcome the limitation of traditional drugs that merely relieve symptoms without repairing necrotic tissue. They have become core seed cells for degenerative disease mechanism research and cell-based new drug development, widely deployed in in vivo intervention experiments using guinea pig heart failure, rat cerebral infarction and canine joint injury animal models.

cells

Figure 4. Alizarin Red and Oil Red O staining results after adipogenic differentiation induction of rabbit adipose-derived mesenchymal stem cells

3. Rich Paracrine Factor Profile for Multidimensional Anti-Inflammation and Damaged Microenvironment Modulation

Cloud-Clone primary MSCs autonomously secrete hundreds of bioactive cytokines, antioxidant proteins and exosomes, covering anti-inflammatory mediators, pro-angiogenic factors and anti-apoptotic substances. They specifically suppress excessive chronic inflammation, ameliorate microcirculation disorders and eliminate oxidative stress damage. Leveraging MSC paracrine activity, researchers can conduct microenvironment regulation studies covering subhealth mechanisms, chronic inflammation, organ fibrosis and aging-related projects. Application scenarios span basic scientific research, cosmetic efficacy evaluation, veterinary care and novel drug screening, with far broader applicability than single-function conventional primary cells.

4. Low Immunogenicity for Universal Allogeneic Research Across All Species

All primary MSCs feature low HLA-DR expression with inherently low immunogenicity. Allogeneic injection in animal models requires no matching and carries minimal rejection risk. The cells also exert bidirectional immunomodulatory effects, supporting research into autoimmune disorders and transplant rejection mechanisms. This resolves the major limitation of severe allogeneic rejection that narrows the scope of conventional primary cell applications, making Cloud-Clone

MSCs the universal primary stem cell product suitable for large-scale in vivo animal trials and preclinical cell therapy evaluation.

III. Full-Chain Integrated Supporting Services: One-Stop Solutions to Accelerate the Entire Research Workflow

Benefiting from Cloud-Clone's full industrial chain layout, researchers utilizing primary MSCs gain access to a closed-loop suite of one-stop research support services:

1. Customized Cell Isolation & Preparation Primary mesenchymal stem cells can be customized according to experimental requirements. Customization covers specified animal age, strain and pathological model-derived cells including specimens from heart failure guinea pigs and diabetic rats. The team also undertakes isolation and extraction of stem cells from rare species and specialized tissues. Strict standardized protocols are implemented throughout sampling, separation and purification to guarantee cell phenotypes aligned with experimental designs, meeting diverse personalized and cutting-edge research demands.

2. Matching Customized Complete Culture Medium Cloud-Clone self-developed MSC-specific complete medium with repeatedly optimized scientific formulations provides a stable environment for cell proliferation, expansion and stemness maintenance, effectively improving cell viability and passaging stability.

3. End-to-End [CRO](#) Experimental Services Supported by in-house standardized animal modeling platforms, comprehensive full-process CRO services are available, covering MSC in vivo transplantation, animal disease modeling, drug administration intervention, pathological section detection and molecular mechanism validation. The full integrated workflow includes cell supply, experimental execution, data analysis and final research report delivery.

About Cloud-Clone Corp.

Cloud-Clone Corp. is dedicated to the development and production of high-quality immunoassay reagents and detection solutions. With a focus on antibody engineering, multiplex assay development, and cross-platform compatibility, the company provides research tools designed to support precision medicine and advanced biomedical investigation globally. Our core products and services include the research and development of proteins, antibodies, ELISA kits, primary cells, and multiplex cytokine assay kits, as well as professional CRO services to fully meet the diverse needs of biomedical research and related fields.

For more information about Cloud-Clone Corp, visit www.cloud-clone.com.

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