



Creative Bioarray

Immortalized Human Stem Cells

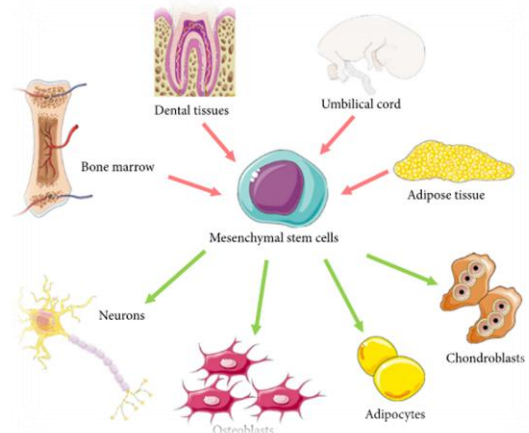
About US

Creative Bioarray is a leading provider of immortalized human cell lines and immortalized animal cell lines. **Our cells and services are designed to fit the increasing need for relevant in vitro cell model systems and novel production hosts.**

We have many years of experience in cell immortalization, and we have been able to successfully immortalize cells from **human, monkey, mouse, bovine and canine** by using different immortalizing agents or genes.

Immortalized Cell Lines

- ✓ telomerized cell lines retain the cell- type specific phenotype while constantly growing
- ✓ No more lot-to-lot variability
- ✓ No more growth arrest



Immortalized Human Wharton's Jelly derived Mesenchymal Stem Cells (Cat No.: CSC-I2031Z)

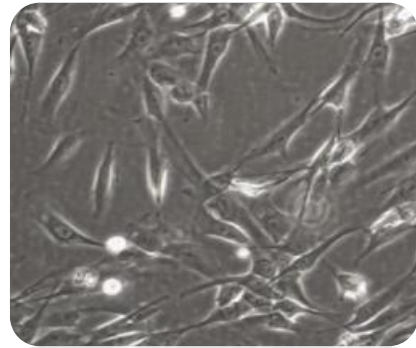
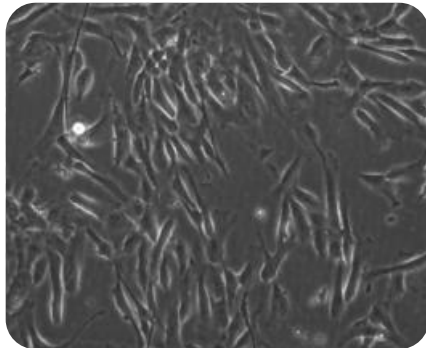
Mesenchymal stem cells play essential roles in tissue homeostasis and repair, whereby evidence has accumulated that these effects are at least in part mediated by secreted extracellular vesicles (EVs). To boost the development of EV-based therapeutics continuously growing, standardizable production hosts for EVs are of ever increasing importance. Creative Bioarray offers telomerized cell systems that fulfil all requirements for production of EVs.

Features

- ✓ Original tissue: **Human Wharton's Jelly**
- ✓ Non-viral expression of **hTERT** in **mesenchymal stem cells**
- ✓ Establishment and growth under xeno-free conditions, complete documentation of any manipulation step
- ✓ **Quality control tested** (freedom from human pathogenic viruses, bacterial, fungal contaminations)
- ✓ Expression of cell-type specific markers such as **CD73, CD90, CD105**
- ✓ Differentiation potential towards **adipocytes, chondrocytes, osteoblasts**
- ✓ Continuous production (3-4 months) of Evs in a **hollow fiber bioreactor**
- ✓ Secretion of stable **Evs with neo-angiogenic and anti-inflammatory activity**

Cell-type specific characteristics

Continuous growth in vitro **Immortalized Human Wharton's Jelly derived Mesenchymal Stem Cells** are characterized by typical markers and functions of mesenchymal stem cells and can be grown continuously for more than 50 population doublings without showing signs of growth retardation or replicative senescence. The population doubling time of **Immortalized Human Wharton's Jelly derived Mesenchymal Stem Cells** is about 40-44 hours.



Immortalized Human Adipose derived Mesenchymal Stem Cells (Cat No.: CSC-I2032Z)

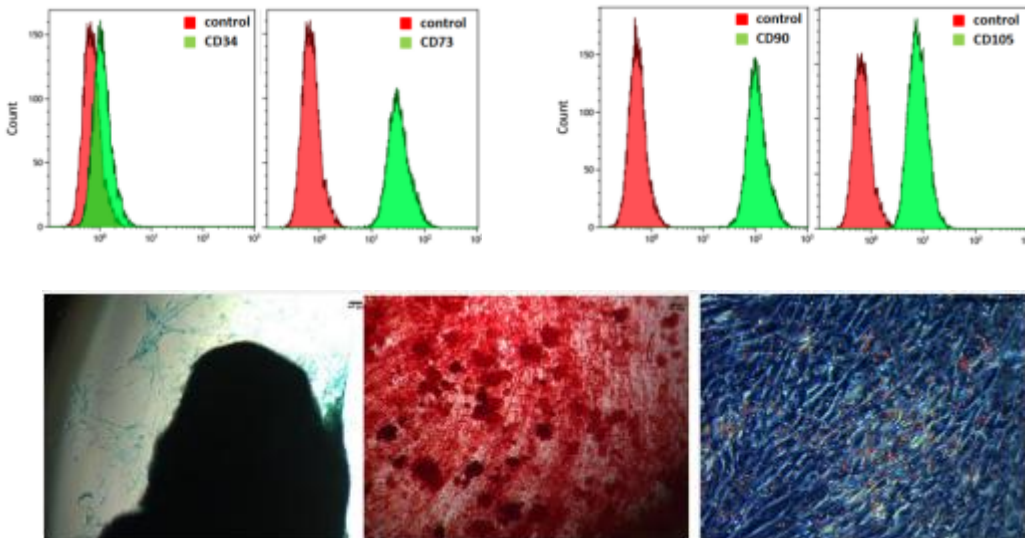
Mesenchymal stem cells are multipotent progenitor cells found in various tissues and body fluids of the human organism, where they play essential roles in tissue homeostasis and repair. The cells are characterized by their self-renewal and multipotent differentiation capacity. However, there are also indications that the cells show significant plasticity and are able to develop also into non-mesenchymal lineages. Thus, MSCs show a high potential in regenerative medicine and cell therapy

Features

- Original tissue: **human adipose tissue**
- Life span extension of isolated MSCs by introduction of **hTERT**
- Expression of cell-type specific markers **CD73, CD90, CD105**
- Differentiation towards **osteoblasts, adipocytes and chondrocytes**
- Growth under **serum-free cell culture conditions** possible, towards standardized culture conditions

Cell-type specific characteristics

Immortalized Human Adipose derived Mesenchymal Stem Cells homogenously express typical mesenchymal stem cell markers such as CD73, CD90 and CD105, whereas less than 5% of the cells express the hematopoietic stem cell marker CD34. Additionally, the cells can differentiated towards adipocytes, osteoblasts (lower, middle, Alizarin Red S staining) and chondrocytes (lower, right, alcian blue staining).



Applications

- Study of differentiation processes and inflammation
- Co-culture with telomerized endothelial cells as enhanced in vitro model for studying vascular biology
- Development of novel treatment strategies/cell-based therapies and extracellular vesicles