

## Human Mesenchymal Stem Cells Derived from Adipose Tissue and Placenta and the Adipocytic and Osteocytic Differentiation

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### Abstract

#### Introduction:

Mesenchymal stem cells can be isolated from adult tissues, such as the adipose tissue, or other sources. Among all these sources, adipose tissue because of easy access, and placenta due to its immunomodulatory properties, in addition to another useful properties, were attracted more attention to themselves. Isolation and comparing these two different sources can help us for accessing a proper source of isolation for clinical use.

#### Materials and Methods:

Adipose stem cells and placenta mesenchymal stem cells were isolated from subcutaneous adipose tissues of 10 healthy women (25-40 years) and from a fresh term placenta, respectively. Stem cells were characterized by flow cytometry using CD29, CD31, CD34, CD44, CD45, CD105, CD166 and HLA-DR markers. Osteogenic and adipocyte differentiation were performed and different characteristics of stem cells with two different sources were compared.

#### Conclusion:

These two sources of stem cells show similar surface markers, morphology and differentiation potential and because of their multipotency to differentiate to adipose and osteocyte, they can apply as attractive sources of mesenchymal stem cells for regenerative medicine.

**Keywords:** Adult Stem Cells, fetal Stem Cells, Mesenchymal stem cells, Differentiation.

### Poster Presentation

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