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Data Article

Data on isolating mesenchymal stromal cells from human adipose tissue using a collagenase-free method

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ABSTRACT

The present dataset describes a detailed protocol to isolate mesenchymal cells from human fat without the use of collagenase. Human fat specimen, surgically cleaned from non-fat tissues (e.g., blood vessels) and reduced into smaller fat pieces of around 1–3 mm size, is incubated in complete culture media for five to seven days. Then, cells started to spread out from the fat explants and to grow in cultures according to an exponential pattern. Our data showed that primary mesenchymal cells presenting heterogeneous morphology start to acquire more homogenous fibroblastic-like shape when cultured for longer duration or when subcultured into new flasks. Cell isolation efficiency as well as cell doubling time were also calculated throughout the culturing experimentations and illustrated in a separate figure thereafter. This paper contains data previously considered as an alternative protocol to isolate adipose-derived mesenchymal stem cell published in "*Proliferation and differentiation of human adipose-derived mesenchymal stem cells (ASCs) into osteoblastic lineage are passage dependent*" [1].

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1. Specifications Table

Subject area	*Cell Biology*
More specific subject area	*Cell culture, mesenchymal stromal cells*
Type of data	*Image (microscopy), text file, graph, figure*
How data was acquired	*Cell counting using light microscope, statistical analysis, math formula calculation*
Data format	*Raw and analyzed data*
Experimental factors	*Cells isolated from fat explants cultured in plastic flasks*
Experimental features	*Spontaneous isolation of mesenchymal cell using in vitro cell culture system and without the use of collagenase*
Data source location	*Lebanese American University, Byblos, Lebanon*
Data accessibility	*Data are provided in the article*

2. Value of the data

- The below data provide a detailed and reproducible collagenase-free protocol to isolate mesenchymal stromal cells from human adipose tissue.
- These data enable researchers to isolate various cell types populating fat.
- These data offer the possibility to isolate specific primary cell cultures with a reduced and efficient cell isolation yield.

3. Data

The data presented in this paper correspond to the isolation of mesenchymal stromal cells without digesting human fat pieces with collagenase. Subsequently, cell morphology, primary cell isolation efficiency as well as cell population doubling time were measured using light microscopy analysis and

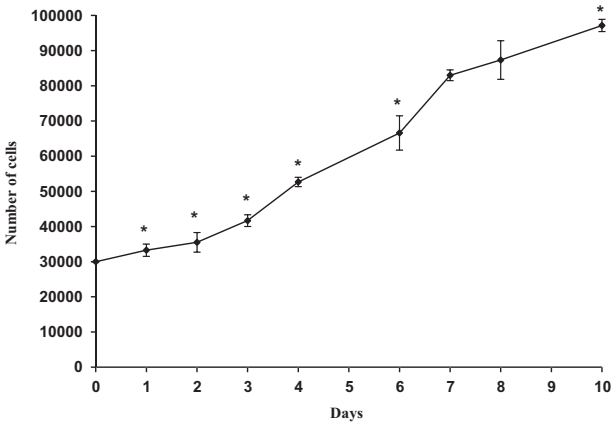

Fig. 1. Growth kinetic results of adherent mesenchymal cells at passage 1. Primary mesenchymal cells were trypsinized and seeded in 6-well plates at a density of 3000 cells/cm^2 rendering cells at passage 1. Cell number in each well was determined with trypan blue exclusion count in triplicate as indicated in methods. Growth rate is compared between various cultivation times. Error bars represent the standard deviation. Values denote mean ($n=3$), $^*P<0.05$ with respect to day 7.