

The role of bone marrow mononuclear cell-conditioned medium in the proliferation and migration of human dermal fibroblasts

Menéndez-Menéndez Y.

Otero-Hernández J.

Vega J.A.

Pérez-Basterrechea M.

Pérez-López S.

Álvarez-Viejo M.

Ferrero-Gutiérrez A.

Background: Several recent studies have demonstrated the great potential of bone marrow cells in regenerative medicine, not only for their ability to differentiate to match a damaged cell type, but also because they synthesize and release various growth factors and cytokines. We examined the effect of bone marrow cell-conditioned medium in the healing process, especially in terms of fibroblast proliferation and migration. **Methods:** These in vitro studies consisted of co-culture (without direct contact) of dermal fibroblasts with mononuclear bone marrow cells and the use of conditioned medium obtained from these cultures in a scratch wound model. **Results:** Mononuclear cells were found to increase the proliferation of fibroblasts, and the conditioned medium showed a stimulatory effect on the migration of fibroblasts. **Conclusion:** When considered together with the observed increase in growth factor levels in conditioned medium, it appears that these cells act through a paracrine mechanism. © 2017 The Author(s).

Bone marrow mononuclear cells

Cell migration and proliferation

Human dermal fibroblasts

Paracrine interactions

Wound repair

adult

Article

bone marrow derived mononuclear cell

cell culture

cell isolation

cell migration

cell proliferation

cell stimulation

clinical article

coculture

controlled study

flow cytometry

human

human cell

human tissue

in vitro study

mesenchymal stem cell

paracrine signaling

skin fibroblast

wound healing

bone marrow cell

cell motion

cell proliferation

conditioned medium

cytology

dermis

drug effect

fibroblast

metabolism

mononuclear cell

pharmacology

solubility

Adult

Bone Marrow Cells

Cell Movement

Cell Proliferation

Culture Media, Conditioned

Dermis

Fibroblasts

Humans

Leukocytes, Mononuclear

Solubility

Wound Healing