PHARMACEUTICAL AGENT FOR PROMOTING THE FUNCTIONAL REGENERATION OF DAMAGED TISSUE

ABSTRACT

The present inventors assessed the possibility that bone marrow-derived cells are mobilized to the grafted skin from nonskin tissues and contribute to skin tissue regeneration during the engraftment of grafted skin on biological tissues. As a result, the present inventors for the first time in the world demonstrated that:

(1) a large number of bone marrow-derived cells are mobilized to grafted skin;

(2) mobilized bone marrow-derived cells differentiate into any of dermal fibroblasts, adipocytes, muscle cells, vascular endothelial cells, and epidermal keratinocytes in grafted skin, and thus mobilized bone marrow-derived cells include bone marrow-derived mesenchymal stem cells;

(3) S100A8 and S100A9 released from necrotic tissues of grafted skin are responsible for mobilizing bone marrow-derived mesenchymal stem cells to the grafted skin from peripheral blood; and

(4) purified S100A8 and S100A9 promote the migration of mesenchymal stem cells isolated/cultured from the bone marrow.

(No suitable figure)