(i) low or absent telomerase activity;

(ii) ability to differentiate into cells of any of the three germ layers;

(iii) absence of demonstration of neoplastic proliferation; and

(iv) self-renewal ability.

[9] The cell preparation described in [1] to [8] above, wherein the pluripotent stem cells have the ability to differentiate into one or more cells selected from the group consisting of epidermal keratinocytes, vascular endothelial cells, vascular pericytes, adipocytes, preadipocytes, skin fibroblasts and nerve sheath cells.

[10] Use of a cell preparation comprising pluripotent stem cells positive for SSEA-3 isolated from biological mesenchymal tissue or cultured mesenchymal cells, in the manufacture of a medicament for preventing and/or treating skin ulcer.

[10a] Use of pluripotent stem cells positive for SSEA-3 isolated from biological mesenchymal tissue or cultured mesenchymal cells, in the manufacture of a pharmaceutical composition for preventing and/or treating skin ulcer, wherein said pluripotent stem cells have a plurality of properties, said plurality of properties comprising:

(i) CD105-positivity;

(ii) low or absent telomerase activity;

(iii)ability to differentiate into any of the three germ layers;

(iv) absence of demonstration of neoplastic proliferation; and

(v) self-renewal ability,

wherein said skin ulcer is selected from the group consisting of diabetic skin ulcer, decubitus ulcer, venous stasis ulcer, arterial ulcer, radiation ulcer, necrotizing fasciitis and third degree burns.

[Effects of the Invention]

[0012]

The present invention is able to inhibit the progression of skin ulcer and repair skin tissue by a skin tissue regeneration mechanism by which Muse cells

differentiate into cells that constitute skin tissue at the site of a skin ulcer following administration of the Muse cells to that site in a subject afflicted with skin ulcer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

[Figure 1] A. Since mice typically have an inherently high level of wound healing ability that enables wounds to heal rapidly, it is difficult to clearly differentiate differences in wound healing when evaluating the wound healing effect of a drug. Consequently, immunodeficient mice afflicted with diabetes, which is characterized by impaired progression of wound healing, were used to evaluate wound healing effects. In order to induce type 1 diabetes, 5-week-old female SCID mice were intraperitoneally injected with streptozotocin (STZ) after fasting for 24 hours. The mice were investigated

CLAIMS

1. Use of pluripotent stem cells positive for SSEA-3 isolated from biological mesenchymal tissue or cultured mesenchymal cells, in the manufacture of a pharmaceutical composition for preventing and/or treating skin ulcer, wherein said pluripotent stem cells have a plurality of properties, said plurality of properties comprising:

(i) CD105-positivity;

(ii) low or absent telomerase activity;

(iii) ability to differentiate into any of the three germ layers;

(iv) absence of demonstration of neoplastic proliferation; and

(v) self-renewal ability,

wherein said skin ulcer is selected from the group consisting of diabetic skin ulcer, decubitus ulcer, venous stasis ulcer, arterial ulcer, radiation ulcer, necrotizing fasciitis and third degree burns.

2. The use according to claim 1, comprising a cell fraction wherein pluripotent stem cells positive for SSEA-3 have been concentrated by external stress stimulation.

3. The use according to any one of claims 1 or 2, wherein the pluripotent stem cells are CD117-negative and CD146-negative.

4. The use according to any one of claims 1 to 3, wherein the pluripotent stem cells are CD117-negative, CD146-negative, NG2-negative, CD34-negative, vWF-negative and CD271-negative.

5. The use according to any one of claims 1 to 4, wherein the pluripotent stem cells are CD34-negative, CD117-negative, CD146-negative, CD271-negative, NG2-negative, vWF-negative, Sox10-negative, Snail-negative,

Slug-negative, Tryp1-negative and Dct-negative.

6. The use according to any one of claims 1 to 5, wherein the pluripotent stem cells have the ability to differentiate into one or more cells selected from the group consisting of epidermal keratinocytes, vascular endothelial cells, vascular pericytes, adipocytes, preadipocytes, skin fibroblasts and nerve sheath cells.