Non-patent Document 2: Y. S. Ha et al., Human Reprod., 20, 1779-1785 (2005)
Non-patent Document 3: F. Holm et al., Human Reprod., 25, 1271-1279 (2010)

Summary of the Invention

Object to be Solved by the Invention

[0009]

An object of the present invention is to provide a liquid for cryopreserving a cell and a liquid for administration of a mammalian cell capable of cryopreserving a mammalian cell and effectively suppressing cell death after thawing, and a method for cryopreserving a mammalian cell using the cell cryopreservation liquid.

Means to Solve the Object

[0010]

In the course of intensive research to solve the above object, the present inventors have found that cell death after thawing can be suppressed more effectively than with prior-art mammalian cell cryopreservation liquids when mammalian cells are cryopreserved in a solution in which DMSO or glycerin is added and furthermore trehalose group and dextran group are added to be 2.0 to 6.0% (w/v) and 4.0 to 7.0% (w/v) respectively to an isotonic solution, and completed the present invention.

[0011]

In one aspect, there is provided a liquid for cryopreserving a mammalian cell, consisting of an isotonic solution comprising: 2.0 to 6.0% (w/v) of trehalose or a derivative thereof, or a salt of the trehalose or the derivative, 4.0 to 7.0% (w/v) of dextran or a derivative thereof, or a salt of the dextran or the derivative, and dimethylsulfoxide or glycerin, and containing neither serum nor albumin.

In another aspect, there is provided a method for cryopreserving a mammalian cell, comprising a step of cryopreserving a mammalian cell in the liquid for cryopreserving a mammalian cell as described herein.

That is, the present invention is as follows.

CLAIMS

1. A liquid for cryopreserving a mammalian cell, consisting of an isotonic solution comprising: 2.0 to 6.0% (w/v) of trehalose or a derivative thereof, or a salt of the trehalose or the derivative, 4.0 to 7.0% (w/v) of dextran or a derivative thereof, or a salt of the dextran or the derivative, and dimethylsulfoxide or glycerin, and containing neither serum nor albumin.

2. The liquid for cryopreserving a mammalian cell according to claim 1, wherein the mammalian cell is a mammalian mesenchymal stem cell.

3. The liquid for cryopreserving a mammalian cell according to claim 2, wherein the mammalian mesenchymal stem cell is a human adipose mesenchymal stem cell.

4. The liquid for cryopreserving a mammalian cell according to any one of claims 1 to 3, wherein dimethylsulfoxide or glycerin is 1.0 to 15% (v/v) of dimethylsulfoxide.

5. The liquid for cryopreserving a mammalian cell according to any one of claims 1 to 4, wherein the isotonic solution is a lactated Ringer's solution.

6. A method for cryopreserving a mammalian cell, comprising a step of cryopreserving a mammalian cell in the liquid for cryopreserving a mammalian cell according to any one of claims 1 to 5.

7. The cryopreserving method according to claim 6, wherein the mammalian cell is a mammalian mesenchymal stem cell.

8. The cryopreserving method according to claim 7, wherein the mammalian mesenchymal stem cell is a human adipose mesenchymal stem cell.