[CLAIMS]

1. A method of ~~culturing~~ preparing a cell population containing stem cells and/or progenitor cells positive for expression of Tie2 (tyrosine kinase with Ig and EGF homology domain-2) (hereinafter referred to as "Tie2-positive stem/progenitor cells"), the method comprising:

an amplification culture stage to enhance expression of Tie2 in the Tie2 positive stem/progenitor cells and amplify the Tie2-positive stem/progenitor cells in the cell population,

wherein the amplification culture stage comprises a step of performing a method of culturing the cell population containing Tie2-positive stem/progenitor cells while present in a non-digested tissue and in an undestroyed tissue microenvironment (hereinafter, the method is referred to as a "first culture method"), and

wherein the amplification culture stage further comprises a step of recovering the post-culture cell population containing the Tie2-positive stem/progenitor cells.

~~2. The first culture method according to claim 1, wherein the Tie2-positive stem/progenitor cells are Tie2-positive stem/progenitor cells derived from a nucleus pulposus tissue of an intervertebral disc.~~

2. The preparation method according to claim 1, wherein the amplification culture stage further comprises a step of performing a method of culturing the cell population containing the Tie2-positive stem/progenitor cells in a culture medium containing at least one kind of Tie2 expression enhancer other than growth factors (hereinafter, the method is referred to as "second culture method"),

wherein the Tie2 expression enhancer other than growth factors is an extract derived from a plant of the genus *Cinnamomum*.

3. The ~~first culture~~ preparation method according to claim 1 or 2, wherein the

non-digested tissue is a nucleus pulposus tissue of an intervertebral disc, and the Tie2-positive stem/progenitor cells are Tie2-positive stem/progenitor cells derived from the nucleus pulposus tissue of the intervertebral disc.

4. The ~~first culture~~preparation method according to any one of claims 1 to 3, wherein the non-digested tissue is a tissue obtained by thawing a cryopreserved tissue.

~~5. The first culture method according to any one of claims 1 to 4, which is performed while the Tie2-positive stem/progenitor cells in the cell population are amplified.~~

~~6. A method of culturing a cell population containing Tie2-positive stem/progenitor cells, the method comprising:~~

~~culturing the cell population containing Tie2-positive stem/progenitor cells in a culture medium containing at least one kind of Tie2 expression enhancer other than growth factors (hereinafter, the method is referred to as a "second culture method").~~

~~7. The second culture method according to claim 6, wherein the Tie2 expression enhancer other than growth factors is an animal/plant-derived extract.~~

~~8. The second culture method according to claim 7, wherein the plant is a plant of the genus *Cinnamomum*.~~

~~9. The second culture method according to any one of claims 6 to 8, which is performed while the Tie2-positive stem/progenitor cells in the cell population are amplified.~~

~~10. A method of culturing a cell population containing Tie2-positive stem/progenitor cells, the method comprising:~~

~~culturing the cell population containing Tie2-positive stem/progenitor cells by using cultureware with a culture surface having undergone cell attachment-increasing treatment (hereinafter, the method is referred to as a "third culture method").~~

~~11. The third culture method according to claim 10, wherein the Tie2-positive stem/progenitor cells have undergone Tie2 expression-enhancing treatment.~~

~~12. The third culture method according to claim 10 or 11, wherein the cell attachment-increasing treatment is treatment of applying a coating agent containing an extracellular matrix and/or a polyamino acid.~~

~~13. The third culture method according to any one of claims 10 to 12, which is performed while the Tie2-positive stem/progenitor cells in the cell population are differentiated into target cells.~~

~~14. The third culture method according to claim 12 or 13, wherein the extracellular matrix and/or the polyamino acid is at least one or more kind selected from the group consisting of type IV collagen, fibronectin, and polylysine.~~

~~15. The third culture method according to any one of claims 10 to 14, which is performed while the Tie2-positive stem/progenitor cells in the cell population are amplified.~~

~~16. The third culture method according to any one of claims 12 to 15, wherein the extracellular matrix is gelatin.~~

~~17. A method of culturing a cell population containing Tie2-positive stem/progenitor cells, the method comprising:~~

~~culturing the cell population containing Tie2-positive stem/progenitor cells while suppressing formation of spheroid colonies in a culture medium containing an extracellular matrix-degrading agent (hereinafter, the method is referred to as a "fourth culture method").~~

~~18. The fourth culture method according to claim 17, wherein the Tie2-positive stem/progenitor cells have undergone Tie2 expression-enhancing treatment.~~

~~19. The fourth culture method according to claim 17 or 18, wherein the~~

~~extracellular matrix-degrading agent comprises at least a protease having activity to degrade type II collagen.~~

~~20. The fourth culture method according to any one of claims 17 to 19, which is performed while the Tie2-positive stem/progenitor cells in the cell population are differentiated into target cells.~~

5. The preparation method according to any one of claims ~~2~~1 to 4, wherein the amplification culture stage further comprises a step of culturing the cell population containing the Tie2-positive stem/progenitor cells in a culture medium only containing, as a Tie2 expression enhancer, a growth factor having a Tie2 expression-enhancing effect.

~~21~~6. A method ~~of~~ for preparing, from a cell population containing Tie2-positive stem/progenitor cells, a cell population containing target cells differentiated from the Tie2-positive stem/progenitor cells, the method comprising:

~~a culture stage (hereinafter, referred to as an~~ "the amplification culture stage"~~)~~ ~~comprising a step of performing the first culture method~~ according to ~~claim 5 and/or the second culture method according to claim 9~~ any one of claims 1 to 5 ~~to enhance expression of Tie2 in the Tie2-positive stem/progenitor cells and amplify the Tie2-positive stem/progenitor cells in the cell population~~; and

a differentiation culture stage,

wherein the differentiation culture stage comprises a step of performing a method of culturing the cell population containing Tie2-positive stem/progenitor cells by using cultureware with a culture surface having undergone cell attachment-increasing treatment (hereinafter, the method is referred to as a "third culture method"), and optionally,

wherein the amplification culture stage further comprises a step of performing

the third culture method.

~~22. The preparation method according to claim 21, wherein the step performed at the amplification culture stage is a step of simultaneously performing the first culture method and the second culture method.~~

~~23. The preparation method according to claim 21 or 22, wherein the amplification culture stage further comprises a step of culturing the cell population containing the Tie2-positive stem/progenitor cells in a culture medium only containing, as a Tie2 expression enhancer, a growth factor having a Tie2 expression-enhancing effect.~~

7. The preparation method according to claim 6, wherein the cell attachment-increasing treatment in the amplification culture stage is treatment of applying a coating agent containing an extracellular matrix and/or a polyamino acid, preferably, gelatin.

8. The preparation method according to claim 6, wherein the cell attachment-increasing treatment of the third culture method in the differentiation culture stage is treatment of applying a coating agent containing an extracellular matrix and/or a polyamino acid, preferably, at least one or more kind selected from the group consisting of type IV collagen, fibronectin, and polylysine.

~~24~~. ~~A method for preparing, from a cell population containing Tie2-positive stem/progenitor cells, a cell population containing target cells differentiated from the Tie2-positive stem/progenitor cells, the method comprising:~~

~~a culture stage (hereinafter referred to as a "differentiation culture stage") comprising a step of performing the third culture method according to claim 13 or 14 and/or the fourth culture method according to claim 20 to induce differentiation from the Tie2-positive stem/progenitor cells into the target cells~~.

~~25~~9. A method for preparing, from a cell population containing Tie2-positive stem/progenitor cells, a cell population containing target cells differentiated from the

Tie2-positive stem/progenitor cells, the method comprising

the amplification culture stage according to any one of claims 1 to 5; and

a differentiation culture stage, ~~The preparation method according to claim 24~~

wherein ~~the step performed at~~ the differentiation culture stage ~~is~~ comprises a step of ~~simultaneously~~ performing:

~~the third culture method and~~

a method ~~comprising~~of culturing the cell population containing Tie2-positive stem/progenitor cells while suppressing formation of spheroid colonies in a culture medium containing an extracellular matrix-degrading agent (herein after, the method is referred to as ~~the~~ " fourth culture method").

10. The preparation method according to claim 9, wherein the extracellular matrix-degrading agent of the fourth culture method comprises at least a protease having activity to degrade type II collagen.

~~26~~11. The preparation method according to any one of claim~~s 24 or 25~~ 6 to 10, wherein the target cells are cells expressing at least type II collagen, preferably, nucleus pulposus cells.

~~27. The preparation method according to claim 26, wherein the cells expressing at least type II collagen are nucleus pulposus cells.~~

~~28~~12. The preparation method according to any one of claims ~~24~~ 6 to ~~27~~11, wherein a cell population in which the Tie2-positive stem/progenitor cells remain is obtained through the differentiation culture stage.

13. A cell population-preparing method comprising:

an amplification culture stage to enhance expression of Tie2 in the Tie2-positive stem/progenitor cells and amplify the Tie2-positive stem/progenitor cells in the cell population; and

a differentiation culture stage to induce differentiation from the Tie2-positive stem/progenitor cells into the target cells after the amplification culture stage,

wherein the amplification culture stage comprises a step of performing both the first culture method according to claim 1 and the second culture method according to claim 2 and optionally a step of performing the third culture method according to claim 6, and

wherein the differentiation culture stage comprises a step of performing both the third culture method according to claim 6 and the fourth culture method according to claim 9.

14. The cell population-preparing method according to claim 12, wherein the step of performing both the first culture method and the second culture method is a fused method.

15. The cell population-preparing method according to claim 13 or 14, wherein the step of performing both the third culture method and the fourth culture method is a fused method.

~~29. A method for preparing, from a cell population containing Tie2-positive stem/progenitor cells, a cell population containing target cells differentiated from the Tie2-positive stem/progenitor cells, the method comprising:~~

~~the amplification culture stage according to any one of claims 21 to 23; and~~

~~the differentiation culture stage according to any one of claims 24 to 28.~~

~~30. A cell population obtained by the culture method according to any one of claims 1 to 20.~~

~~31. A culture comprising a culture medium in the culture method according to any one of claims 1 to 20 and a cell population to be subjected to the culture method, being cultured, or produced.~~

~~32. A cell population obtained through the amplification culture stage and/or the differentiation culture stage in the preparation method according to any one of claims 21 to 29.~~

~~33. A culture comprising a culture medium for amplification culture stage or a culture medium for differentiation culture stage and a cell population to be subjected to the amplification culture stage or the differentiation culture stage, respectively, being cultured, or produced in the preparation method according to any one of claims 21 to 29.~~

~~34. A composition for cell therapy, comprising the cell population according to claim 30 or 32.~~

~~35. The composition for cell therapy according to claim 34 for use in treatment or prevention of a disease having a disorder, degeneration, or herniation of an intervertebral disc as a manifested symptom.~~

~~36. A method of preserving a cell population containing Tie2-positive stem/progenitor cells, the method comprising:~~

~~cryopreserving the cell population containing Tie2-positive stem/progenitor cells while present in a non-digested tissue to maintain a state in which Tie2 is activated and/or expressed or to suppress a decrease in the Tie2-positive stem/progenitor cells in the cell population.~~