

We claim:

1. Use of a combination of

a) a population of cultured autologous or allogeneic_mammalian cells that contain vector containing a gene encoding a member of transforming growth factor (TGF) superfamily of proteins selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or BMP-9, and

b) a population of cultured connective tissue cells that do not contain any vector containing a gene,

in the manufacture of a medicament for treating osteoarthritis,

wherein the cultured autologous or allogeneic mammalian cells that contain vector are human embryonic kidney cells or epithelial cells; and

wherein said medicament is to be transferred by intraarticular injection to an arthritic joint space of a mammalian host with a pharmaceutically acceptable carrier, such that the activity of the combination within the joint space results in regenerating connective tissue.

2. The use according to claim 1, wherein the vector is a viral vector.

3. The use according to claim 2, wherein the viral vector is a retroviral vector.

4. The use according to claim 1, wherein the vector is a plasmid vector.

5. The use of claim 1, wherein the connective tissue cells are chondrocytes.

6. Use of a combination of

a) an *in vitro* population of cultured autologous or allogeneic_mammalian cells that contain vector containing a gene encoding a member of transforming growth factor (TGF) superfamily of proteins selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or BMP-9, and

b) a population of cultured connective tissue cells that do not contain any vector containing a gene,

in the manufacture of a medicament for regenerating hyaline cartilage,

wherein said medicament is to be transferred by intraarticular injection to an arthritic joint

space of a mammalian host with a pharmaceutically acceptable carrier, such that the activity of the combination within the joint space results in regenerating connective tissue, and

wherein the cultured autologous or allogeneic_mammalian cells that contain vector are human embryonic kidney cells or epithelial cells.

7. The use according to claim 6, wherein the vector a viral vector.

8. The use according to claim 7, wherein the viral vector is a retroviral vector.

9. The use according to claim 6, wherein the vector is a plasmid vector.

10. The use according to claim 6, wherein the connective tissue cells are chondrocytes.

11. Use of

a recombinant viral or plasmid vector comprising a DNA sequence encoding a member of a transforming growth factor superfamily of proteins operatively linked to a promoter

in the manufacture of a medicament for regenerating hyaline cartilage,

wherein said medicament comprises transfecting *in vitro* a population of cultured allogeneic mammalian cells with the recombinant viral or plasmid vector, resulting in a population of transfected allogeneic mammalian cells;

wherein the member of a transforming growth factor superfamily of proteins is selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or BMP-9;

wherein the transfected allogenic mammalian cells are human embryonic kidney cells or epithelial cells; and

wherein said transfected allogeneic mammalian cells are to be transplanted by intraarticular injection to an arthritic joint space of a mammalian host with a pharmaceutically acceptable carrier, such that expression of said DNA sequence within said joint space results in regenerating hyaline cartilage.

12. The use according to claim 11, wherein the allogenic mammalian cells are *in vitro* transfected with a recombinant viral vector.

13. The use according to claim 12, wherein the recombinant viral vector is a retroviral vector.

14. The use according to claim 11, wherein the allogenic mammalian cells are *in vitro* transfected with a plasmid vector.

15. Use of
a recombinant viral or plasmid vector comprising a DNA sequence encoding a member of a transforming growth factor superfamily of proteins operatively linked to a promoter
in the manufacture of a medicament for treating osteoarthritis,
wherein said medicament comprises transfecting *in vitro* a population of cultured allogeneic mammalian cells with the recombinant viral or plasmid vector, resulting in a population of transfected allogeneic mammalian cells;
wherein the member of a transforming growth factor superfamily of proteins is selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or BMP-9;
wherein the transfected allogenic mammalian cells are human embryonic kidney cells or epithelial cells; and
wherein said transfected allogeneic mammalian cells are to be transplanted by intraarticular injection to an arthritic joint space of a mammalian host with a pharmaceutically acceptable carrier, such that expression of said DNA sequence within said joint space results in regenerating hyaline cartilage.

16. The use according to claim 15, wherein the allogenic mammalian cells are *in vitro* transfected with a recombinant viral vector.

17. The use according to claim 16, wherein the recombinant viral vector is a retroviral vector.

18. The use according to claim 15, wherein the allogenic mammalian cells are *in vitro* transfected with a plasmid vector.

19. Use of a combination of

a) a population of cultured autologous or allogeneic mammalian cells that contain vector containing a gene encoding a member of transforming growth factor (TGF) superfamily of proteins selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or

BMP-9, and

b) a population of cultured connective tissue cells that do not contain any vector containing a gene,

in the manufacture of a medicament for treating an injury to connective tissue in a joint,

wherein the cultured autologous or allogeneic_mammalian cells that contain vector are human embryonic kidney cells or epithelial cells; and

wherein said medicament is to be transferred by intraarticular injection to an arthritic joint space of a mammalian host with a pharmaceutically acceptable carrier, such that the activity of the combination within the joint space results in regenerating connective tissue.

20. Use of

a recombinant viral or plasmid vector comprising a DNA sequence encoding a member of a transforming growth factor superfamily of proteins operatively linked to a promoter in the manufacture of a medicament for treating an injury to connective tissue in a joint,

wherein said medicament comprises transfecting *in vitro* a population of cultured allogeneic mammalian cells with the recombinant viral or plasmid vector, resulting in a population of transfected allogeneic mammalian cells;

wherein the member of a transforming growth factor superfamily of proteins is selected from TGF- β 1, TGF- β 2, TGF- β 3, BMP-2, BMP-3, BMP-4, BMP-6, BMP-7, or BMP-9;

wherein the transfected allogeneic mammalian cells are human embryonic kidney cells or epithelial cells; and

wherein said transfected allogeneic mammalian cells are to be transplanted by intraarticular injection to an arthritic joint space of a mammalian host with a pharmaceutically acceptable carrier, such that expression of said DNA sequence within said joint space results in regenerating hyaline cartilage.