WHAT IS CLAIMED IS:

1. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of exhausted B cells ($CD19^+$, $CD27^-$, IgD^-) in a sample of the subject's serum decreases by at least 25% as compared to the number of exhausted B cells in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

2. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of switched memory B cells ($CD19^+$, $CD27^{high}$, IgD^-) in a sample of the subject's serum increases by at least 100% as compared to the number of switched memory B cells in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

3. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of B-cells expressing intracellular TNF-α in a sample of the subject's serum decreases by at least 30% as compared to the number of B-cells expressing intracellular TNF-α in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

4. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of early activated T-cells ($CD3^+$, $CD69^+$) in a sample of the subject's serum decreases by at least 30% as compared to the number of early activated T-cells in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

5. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of chronic activated T-cells ($CD3^+$, $CD25^+$) in a sample

of the subject's serum decreases by at least 70% as compared to the number of chronic activated T-Cells in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

6. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the number of Temra cells ($CD45RA^+$, $CCR7^-$) in a sample of the subject's serum decreases by at least 40% as compared to the number of Temra cells in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

7. Use of a population of isolated allogeneic human mesenchymal stem cells in the manufacture of a medicament for treating non-ischemic dilated cardiomyopathy in a subject in need thereof, wherein the TNF-α concentration in a sample of the subject's serum decreases by at least 80% as compared to the TNF-α concentration in a sample of the subject's serum prior to administration of said population of isolated allogeneic human mesenchymal stem cells, thereby treating said non-ischemic dilated cardiomyopathy.

8. The use of any one of claims 1-7, wherein the subject is a human.

9. The use of any one of claims 1-8, wherein the mesenchymal stem cells are bone marrow-derived mesenchymal stem cells.

10. The use of any one of claims 1-9, wherein the mesenchymal stem cells do not express STRO-1.

11. The use of any one of claims 1-7, wherein the mesenchymal stem cells do not express CD45.

12. The use of any one of claims 1-11, wherein the mesenchymal stem cells do not express fibroblast surface markers or have a fibroblast morphology.

13. The use of any one of claims 1-12, wherein the mesenchymal stem cells are not genetically manipulated.

14. The use of any one of claims 1-13, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered in a single dose.

15. The useof any one of claims 1-13, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered in two or more doses.

16. The use of any one of claims 1-13, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered at least yearly.

17. The use of any one of claims 1-16, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered systemically.

18. The use of any one of claims 1-17, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered by infusion or direct injection.

19. The use of any one of claims 1-18, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered intravenously, intraarterially, or intraperitoneally.

20. The use of claim 19, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered intravenously.

21. The use of any one of claims 1-16, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered intramuscularly, intravenously, intraarterially, intraperitoneally, subcutaneously, intradermally, orally, transendocardially, or intranasally.

22. The use of claim 21, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered intramuscularly.

23. The use of any one of claims 1-22, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered at a dose of about $20x10^6$ mesenchymal stem cells.

24. The use of any one of claims 1-22, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered at a dose of about $100x10^6$ mesenchymal stem cells.

25. The use of any one of claims 1-22, wherein the isolated population of allogeneic mesenchymal stem cells is to be administered at a dose of about $200x10^6$ mesenchymal stem cells.

26. The use of any one of claims 1-25, wherein the isolated population of allogeneic mesenchymal stem cells are to be obtained from a human donor and wherein a step of MHC matching of the human donor to the subject is not employed prior to the administration of the isolated population of allogeneic mesenchymal stem cells to the subject.