WHAT IS CLAIMED IS:

1. A solution for the wet preservation of tissue comprising:

between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO); and one or more soluble salts of: sodium, potassium, calcium, magnesium, or other monovalent or divalent metal cationic salts.

2. The solution according to claim 1, comprising between about 2% to about 15% by volume DMSO.

3. The solution according to claim 1, comprising greater than about 2% by volume DMSO.

4. The solution according to claim 1, comprising greater than about 5% by volume DMSO.

5. The solution according to claim 1, comprising greater than about 10% by volume DMSO.

6. The solution according to claim 1, wherein the one or more soluble salts provide one or more of:

between about 43 mM and about 2.6 M sodium cation,
between about 2.7 mM and about 5.4 mM potassium cation,
between about 0.9 mM and about 2.7 mM calcium cation, and/or
between about 0.945 mM and about 1.2 mM magnesium cation.

7. The solution according to claim 1, wherein the one or more soluble salts of sodium comprise between about 2.5 g/L and about 150 g/L sodium chloride.

8. The solution according to clam 1, wherein the one or more soluble salts of potassium comprise between about 0.2 g/L to about 0.4 g/L potassium chloride.

9. The solution according to claim 1, wherein the one or more soluble salts of calcium comprise between about 0.1 g/L to about 0.3 g/L calcium chloride.

10. The solution according to claim 1, wherein the one or more soluble salts of magnesium comprise between about 0.09 to about 0.11 g/L magnesium chloride.

11. The solution according to claim 1, wherein the one or more soluble salts of sodium comprise between about 0.2 to about 0.8 g/L sodium bicarbonate.

12. The solution according to claim 1, wherein the solution comprises between about 2% to about 15% DMSO by volume, and wherein the one or more soluble salts provide one or more of:

between about 43 mM and about 2.6 M sodium cation,

between about 2.7 mM and about 5.4 mM potassium cation,

between about 0.9 mM and about 2.7 mM calcium cation, and/or

between about 0.945 mM and about 1.2 mM magnesium cation.

13. A method of preserving tissue comprising:

preparing a specimen of tissue;

storing the specimen of tissue in a solution comprising:

between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO); and

one or more soluble salts of: sodium, potassium, calcium, magnesium, or other monovalent or divalent metal cationic salts.

14. The method according to claim 13, wherein the specimen of tissue is nerve tissue.

15. The method according to claim 14, wherein the nerve tissue is one of human nerve tissue or animal nerve tissue.

16. The method according to claim 13, wherein the specimen of tissue includes one or more of human vascular tissue, urological tissue, tendons, or muscle tissue.

17. The method according to claim 13, wherein the specimen of tissue includes one or more of animal vascular tissue, urological tissue, tendons, or muscle tissue.

~~18. The method according to claim 13, wherein preparing the specimen of tissue includes decellularizing the tissue.~~

~~19. The method according to claim 13, wherein the solution includes between about 2% to about 15% by volume DMSO.~~

~~20. The method according to claim 13, wherein the solution includes greater than about 2% by volume DMSO.~~

~~21. The method according to claim 13, wherein the solution includes greater than about 5% by volume DMSO.~~

~~22. The method according to claim 13, wherein the solution includes greater than about 10% by volume DMSO.~~

~~23. The method according to claim 13, wherein the one or more soluble salts provide one or more of:~~

~~between about 43 mM and about 2.6 M sodium cation,~~
~~between about 2.7 mM and about 5.4 mM potassium cation,~~
~~between about 0.9 mM and about 2.7 mM calcium cation, and/or~~
~~between about 0.945 mM and about 1.2 mM magnesium cation.~~

~~24. The method according to claim 13, wherein the one or more soluble salts of sodium comprise between about 2.5 g/L and about 150 g/L sodium chloride.~~

~~25. The method according to claim 13, wherein the one or more soluble salts of potassium comprise between about 0.2 g/L to about 0.4 g/L potassium chloride.~~

~~26. The method according to claim 13, wherein the one or more soluble salts of calcium comprise between about 0.1 g/L to about 0.3 g/L calcium chloride.~~

~~27. The method according to claim 13, wherein the one or more soluble salts of magnesium comprise between about 0.09 to about 0.11 g/L magnesium chloride.~~

28. The method according to claim 13, wherein the one or more soluble salts of sodium comprise between about 0.2 g/L to about 0.8 g/L sodium bicarbonate.

29. The method according to claim 13, wherein the solution comprises between about 2% to about 15% DMSO by volume, and wherein the one or more soluble salts provide one or more of:

between about 43 mM and about 2.6 M sodium cation,

between about 2.7 mM and about 5.4 mM potassium cation,

between about 0.9 mM and about 2.7 mM calcium cation, and/or

between about 0.945 mM and about 1.2 mM magnesium cation.

30. A wet-preserved tissue comprising:

a tissue specimen disposed in a solution comprising:

between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO); and

one or more soluble salts, wherein the one or more soluble salts provide one or more of:

between about 43 mM and about 2.6 M sodium cation,

between about 2.7 mM and about 5.4 mM potassium cation,

between about 0.9 mM and about 2.7 mM calcium cation, and/or

between about 0.945 mM and about 1.2 mM magnesium cation.

31. The wet-preserved tissue according to claim 30, wherein the one or more soluble salts include one or more of:

between about 2.5 g/L and about 150 g/L sodium chloride;

between about 0.2 g/L to about 0.4 g/L potassium chloride;

between about 0.1 g/L to about 0.3 g/L calcium chloride;

between about 0.2 g/L to about 0.8 g/L sodium bicarbonate; and/or

between about 0.09 g/L to about 0.11 g/L magnesium chloride.

32. The wet-preserved tissue according to claim 30, wherein the specimen of tissue is nerve tissue.

~~33. The wet-preserved tissue according to claim 32, wherein the nerve tissue is one of human or animal nerve tissue.~~

~~34. The wet-preserved tissue according to claim 30, wherein the specimen of tissue includes one or more of human vascular tissue, urological tissue, tendons, or muscle tissue.~~

~~35. The wet-preserved tissue according to claim 30, wherein the specimen of tissue includes one or more of animal vascular tissue, urological tissue, tendons, or muscle tissue.~~

~~36. The wet-preserved tissue according to claim 30, wherein preparing the specimen of tissue includes decellularizing the tissue.~~

~~37. The wet-preserved tissue according to claim 30, wherein the solution includes between about 2% to about 15% by volume DMSO.~~

~~38. The wet-preserved tissue according to claim 30, wherein the solution includes greater than about 2% by volume DMSO.~~

~~39. The wet-preserved tissue according to claim 30, wherein the solution includes greater than about 5% by volume DMSO.~~

~~40. The wet-preserved tissue according to claim 30, wherein the solution includes greater than about 10% by volume DMSO.~~

~~41. The wet-preserved tissue according to claim 30, wherein the tissue is at least partially immersed in the solution.~~

~~42. A method of using a wet-preserved tissue specimen comprising:~~

~~removing the specimen of tissue from a solution comprising:~~

~~between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO);~~

~~and one or more soluble salts, wherein the one or more soluble salts provide one or more of:~~

~~between about 43 mM and about 2.6 M sodium cation,~~

~~between about 2.7 mM and about 5.4 mM potassium cation,~~

between about 0.9 mM and about 2.7 mM calcium cation, and/or

between about 0.945 mM and about 1.2 mM magnesium cation; and

reducing the amount of DMSO within the tissue to a residual amount below a predetermined threshold.

43. The method according to claim 42, wherein the one or more soluble salts include one or more of:

between about 2.5 g/L and 150 g/L sodium chloride;

between about 0.2 g/L to about 0.4 g/L potassium chloride;

between about 0.1 g/L to about 0.3 g/L calcium chloride;

between about 0.2 g/L to about 0.8 g/L sodium bicarbonate; and/or

between about 0.09 g/L to about 0.11 g/L magnesium chloride.

44. The method according to claim 42, wherein the specimen of tissue is nerve tissue.

45. The method according to claim 44, wherein the nerve tissue is one of human nerve tissue or animal nerve tissue.

46. The method according to claim 42, wherein the specimen of tissue includes one or more of human vascular tissue, urological tissue, tendons, or muscle tissue.

47. The method according to claim 42, wherein the specimen of tissue includes one or more of animal vascular tissue, urological tissue, tendons, or muscle tissue.

48. The method according to claim 42, wherein preparing the specimen of tissue includes decellularizing the tissue.

49. The method according to claim 42, wherein the solution includes between about 2% to about 15% by volume DMSO.

50. The method according to claim 42, wherein the solution includes greater than about 2% by volume DMSO.

~~51. The method according to claim 42, wherein the solution includes greater than about 5% by volume DMSO.~~

~~52. The method according to claim 42, wherein the solution includes greater than about 10% by volume DMSO.~~

~~53. The method according to claim 42, wherein the residual amount of DMSO within the tissue is at or below 50 mg DMSO.~~

1. A wet-preserved tissue composition comprising:

nerve tissue; and

an aqueous solution consisting of:

between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO); and

one or more soluble salts, wherein the one or more soluble salts of the aqueous solution include one or more of:

sodium chloride,

potassium chloride,

calcium chloride,

magnesium chloride, and/or

sodium bicarbonate.

2. The wet-preserved tissue composition according to claim 1, wherein the percentage of DMSO by volume of the aqueous solution is between about 2% to about 15%.

3. The wet-preserved tissue composition according to claim 1, wherein the percentage of DMSO by volume of the aqueous solution is between about 2% to about 50%.

4. The wet-preserved tissue composition according to claim 1, wherein the percentage of DMSO by volume of the aqueous solution is between about 5% to about 50%.

5. The wet-preserved tissue composition according to claim 1, wherein the percentage of DMSO by volume of the aqueous solution is between about 10% to about 50%.

6. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution provide one or more of:

between about 43 mM to about 2.6 M sodium cation,

between about 2.7 mM to about 5.4 mM potassium cation,

between about 0.9 mM to about 2.7 mM calcium~~,~~ cation, and/or

between about 0.945 mM to about 1.2 mM magnesium cation.

7. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution is between about 2.5 g/L to about 150 g/L sodium chloride.

8. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution is between about 0.2 g/L to about 0.4 g/L potassium chloride.

9. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution is between about 0.1 g/L to about 0.3 g/L calcium chloride.

10. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution is between about 0.09 g/L to about 0.11 g/L magnesium chloride.

11. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution is between about 0.2 g/L to about 0.8 g/L sodium bicarbonate.

12. The wet-preserved tissue composition according to claim 1, wherein the one or more soluble salts of the aqueous solution include one or more of:

between about 2.5 g/L to about 12 g/L sodium chloride,

about 0.3 g/L potassium chloride,

about 0.2 g/L calcium chloride,

about 0.1 g/L magnesium chloride, or

about 0.4 g/L sodium bicarbonate.

13. A method of preserving nerve tissue comprising:

preparing nerve tissue; and

storing the nerve tissue in an aqueous solution consisting of:

between about 0.1% to about 50% by volume dimethyl sulfoxide (DMSO); and

one or more soluble salts, wherein the one or more soluble salts of the aqueous solution include one or more of:

sodium chloride,

potassium chloride,

calcium chloride,

magnesium chloride, and/or

sodium bicarbonate.

14. The method according to claim 13, wherein the nerve tissue is one of human nerve tissue or animal nerve tissue.

15. The method according to claim 13, wherein preparing the nerve tissue includes decellularizing the tissue.

16. The method according to claim 13, wherein the percentage of DMSO by volume of the aqueous solution is between about 2% to about 15%.

17. The method according to claim 13, wherein the percentage of DMSO by volume of the aqueous solution is between about 2% to about 50%.

18. The method according to claim 13, wherein the percentage of DMSO by volume of the aqueous solution is between about 5% to about 50%.

19. method according to claim 13, wherein the percentage of DMSO by volume of the aqueous solution is between about 10% and about 50%.

20. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution provide one or more of:

between about 43 mM to about 2.6 M sodium cation,

between about 2.7 mM to about 5.4 mM potassium cation,

between about 0.9 mM to about 2.7 mM calcium cation, and/or

between about 0.945 mM to about 1.2 mM magnesium cation.

21. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution is between about 2.5 g/L to about 150 g/L sodium chloride.

22. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution is between about 0.2 g/L to about 0.4 g/L potassium chloride.

23. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution is between about 0.1 g/L to about 0.3 g/L calcium chloride.

24. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution is between about 0.09 g/L to about 0.11 g/L magnesium chloride.

25. The method according to claim 13, wherein the one or more soluble salts of the aqueous solution is between about 0.2 g/L to about 0.8 g/L sodium bicarbonate.

26. The method according to claim 13, wherein the aqueous solution consists of between about 2% to about 15% DMSO by volume, and wherein the one or more soluble salts of the aqueous solution provide one or more of:

between about 43 mM to about 2.6 M sodium cation,

between about 2.7 mM to about 5.4 mM potassium cation,

between about 0.9 mM to about 2.7 mM calcium cation, and/or

between about 0.945 mM to about 1.2 mM magnesium cation.