WHAT IS CLAIMED IS:

1. A method for purifying recombinant adeno-associated viral (rAAV) vector particles, wherein the method excludes cesium chloride gradient ultracentrifugation, said method comprising the steps of:

(a) harvesting cells and/or cell culture supernatant comprising rAAV vector particles to produce a harvest;

(b) concentrating said harvest produced in step (a) to produce a concentrated harvest;

(c) lysing said harvest produced in step (a) or said concentrated harvest produced in step (b) to produce a lysate;

(d) treating the lysate produced in step (c) to reduce contaminating nucleic acid in the lysate thereby producing a nucleic acid reduced lysate;

(e)(i) filtering said nucleic acid reduced lysate produced in step (d) to produce a clarified lysate, and (e)(ii) diluting said clarified lysate to produce a diluted clarified lysate;

(f) subjecting said nucleic acid reduced lysate in step (d), or clarified lysate in step (e)(i) or diluted clarified lysate produced in step (e)(ii) to (f)(i) AAV affinity column chromatography to produce a column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (f)(ii) diluting said column eluate to produce a diluted column eluate;

(g) subjecting said column eluate in step (f)(i) or said diluted column eluate produced in step (f)(ii) to (g)(i) anion exchange chromatography to produce a second column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (g)(ii) concentrating said second column eluate to produce a concentrated second column eluate;

(h) subjecting said second column eluate in step (g)(i) or said concentrated second column eluate produced in step (g)(ii) to (h)(i) size exclusion column chromatography (SEC) to produce a third column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (h)(ii) concentrating said third column eluate to produce a concentrated third column eluate; and

(i) filtering said second column eluate in step (g)(i) or said diluted second column eluate produced in step (g)(ii), or filtering said third column eluate in step (h)(i) or said concentrated third column eluate produced in step (h)(ii), thereby producing purified rAAV vector particles.

2. A method for purifying recombinant adeno-associated viral (rAAV) vector particles, wherein the method excludes cesium chloride gradient ultracentrifugation, said method comprising the steps of:

(a) harvesting cells and/or cell culture supernatant comprising rAAV vector particles to produce a harvest;

(b) concentrating said harvest produced in step (a) to produce a concentrated harvest;

(c) lysing said harvest produced in step (a) or said concentrated harvest produced in step (b) to produce a lysate;

(d) treating the lysate produced in step (c) to reduce contaminating nucleic acid in the lysate thereby producing a nucleic acid reduced lysate;

(e)(i) filtering said nucleic acid reduced lysate produced in step (d) to produce a clarified lysate, and (e)(ii) diluting said clarified lysate to produce a diluted clarified lysate;

(f) subjecting said nucleic acid reduced lysate in step (d), or clarified lysate or diluted clarified lysate produced in step (e)(i) to (f)(i) AAV affinity column chromatography to produce a column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (f)(ii) concentrating said column eluate to produce a concentrated column eluate;

(g) subjecting said column eluate in step (f)(i) or said concentrated column eluate produced in step (f)(ii) to (g)(i) size exclusion column chromatography (SEC) to produce a second column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (g)(ii) diluting said second column eluate to produce a diluted second column eluate;

(h) subjecting said second column eluate in step (g)(i) or said diluted second column eluate produced in step (g)(ii) to (h)(i) anion exchange chromatography to produce a third column eluate comprised of rAAV vector particles thereby separating rAAV vector particles from protein impurities or other production/ process related impurities, and (h)(ii) diluting said third column eluate to produce a diluted third column eluate; and

(i) filtering said second column eluate in step (g)(i) or said diluted second column eluate produced in step (g)(ii), or filtering said third column eluate in step (h)(i) or said concentrated third column eluate produced in step (h)(ii), thereby producing purified rAAV vector particles.

3. A method according to claim 1 or 2, wherein said concentrating of step (b) and/or step (f) and/or step (g) and/or step (h) is via ultrafiltration/diafiltration, or by tangential flow filtration (TFF).

4. A method according to any of claims 1-3, wherein said lysing of said harvest produced in step (a) or said concentrated harvest produced in step (b) is by physical or chemical means.

5. A method according to claim 4, wherein the physical means comprises microfluidization or homogenization.

6. A method according to any of claims 1-5, wherein said diluting of said clarified lysate of step (e) is with an aqueous buffered phosphate, acetate or Tris solution.

7. A method according to any of claims 1-6, wherein said diluting of said column eluate of step (f)(ii) or said second column eluate of step (g)(i) is with an aqueous buffered phosphate, acetate or Tris solution.

8. A method according to any of claims 1-7, wherein said rAAV vector particles resulting from step (i) are formulated with a surfactant to produce an AAV vector formulation.

9. A method according to any of claims 1-8, wherein said anion exchange column chromatography of step (g) and/or (h) comprises polyethylene glycol (PEG) modulated column chromatography.

10. A method according to claim 9, wherein said anion exchange column chromatography of step (g) and/or (h) comprises washing said column with a PEG solution or an aqueous surfactant solution prior to elution of said rAAV vector particles from the column.

11. A method according to any of claims 1-10, wherein said rAAV vector particles are eluted from said anion exchange column of step (g) and/or (h) with an aqueous Tris-Cl/NaCl buffer.

12. A method according to any of claims 1-11, wherein said anion exchange column of step (g) and/or (h) is washed with an aqueous Tris-Cl/NaCl buffer; or is washed one or more times to reduce the amount of AAV empty capsids in the second or third column eluate.

13. A method according to any of claims 1-12, wherein said anion exchange column of step (g) and/or (h) comprises a quarternary ammonium functional group such as quaternized polythyleneimine.

14. A method according to any of claims 1-13, wherein said size exclusion column (SEC) of step (g) and/or (h) has a separation/fractionation range (Molecular weight) from about 10,000 to about 600,000, inclusive.

15. A method according to any of claims 1-14, wherein the AAV affinity column comprises a protein or ligand that binds to AAV capsid protein.

16. A method according to any of claims 1-15, wherein said rAAV vector particles comprise a transgene that encodes:

a nucleic acid selected from the group consisting of a siRNA, an antisense molecule, miRNA a ribozyme and a shRNA; or

a gene product selected from the group consisting of insulin, glucagon, growth hormone (GH), parathyroid hormone (PTH), growth hormone releasing factor (GRF), follicle stimulating hormone (FSH), luteinizing hormone (LH), human chorionic gonadotropin (hCG), vascular endothelial growth factor (VEGF), angiopoietins, angiostatin, granulocyte colony stimulating factor (GCSF), erythropoietin (EPO), connective tissue growth factor (CTGF), basic fibroblast growth factor (bFGF), acidic fibroblast growth factor (aFGF), epidermal growth factor (EGF), transforming growth factor α (TGFα), platelet-derived growth factor (PDGF), insulin growth factors I and II (IGF-I and IGF-II), TGFβ, activins, inhibins, bone morphogenic protein (BMP), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), neurotrophins NT-3 and NT4/5, ciliary neurotrophic factor (CNTF), glial cell line derived neurotrophic factor (GDNF), neurturin, agrin, netrin-1 and netrin-2, hepatocyte growth factor (HGF), ephrins, noggin, sonic hedgehog and tyrosine hydroxylase; or

a gene product selected from the group consisting of thrombopoietin (TPO), interleukins (IL1 through IL-17), monocyte chemoattractant protein, leukemia inhibitory factor, granulocyte-macrophage colony stimulating factor, Fas ligand, tumor necrosis factors α and β, interferons α, β, and γ, stem cell factor, flk-2/flt3 ligand, IgG, IgM, IgA, IgD and IgE, chimeric immunoglobulins, humanized antibodies, single chain antibodies, T cell receptors, chimeric T cell receptors, single chain T cell receptors, class I and class II MHC molecules.

17. A method according to any of claims 1-15, wherein said rAAV vector particles comprise a transgene encoding a protein useful for correction of in born errors of metabolism selected from the group consisting of carbamoyl synthetase I, ornithine transcarbamylase, arginosuccinate synthetase, arginosuccinate lyase, arginase, fumarylacetacetate hydrolase,

phenylalanine hydroxylase, alpha- 1 antitrypsin, glucose-6-phosphatase, porphobilinogen deaminase, factor V, factor VIII, factor IX, cystathione beta-synthase, branched chain ketoacid decarboxylase, albumin, isovaleryl-coA dehydrogenase, propionyl CoA carboxylase, methyl malonyl CoA mutase, glutaryl CoA dehydrogenase, insulin, beta-glucosidase, pyruvate carboxylate, hepatic phosphorylase, phosphorylase kinase, glycine decarboxylase, RPE65, H-protein, T-protein, a cystic fibrosis transmembrane regulator (CFTR) sequence, and a dystrophin cDNA sequence.

18. A method according to any of claims 1-17, wherein the method recovers approximately 50-90% of the total rAAV vector particles from the harvest produced in step (a) or said concentrated harvest produced in step (b).

19. A method according to any of claims 1-18, wherein steps (c) and (d) are performed concurrently.

20. A method according to any of claims 1-19, wherein said rAAV vector particles comprise a capsid sequence having 90% or more identity to an AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, Rh10, Rh74, SEQ ID NO:1 or SEQ ID NO:2 capsid sequence.

21. A method according to any of claims 1-20, wherein said rAAV vector particles comprise an ITR sequence having 70% or more identity to an AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, Rh10, or Rh74 ITR sequence.

22. A method according to any of claims 1-21, wherein said cells comprise suspension or adherent cells; or mammalian cells; or HEK-293 cells.