CLAIMS

1. A use of a recombinant adeno-associated viral (rAAV) particle comprising an AAV serotype 2 (AAV2) capsid in the manufacture of a medicament for treating a disorder of the central nervous system of a mammal, wherein the rAAV particle is formulated for administration to each hemisphere of the striatum, wherein the rAAV particle comprises an rAAV vector comprising a heterologous nucleic acid that encodes a therapeutic polypeptide, and wherein the heterologous nucleic acid is expressed in at least the cortical structures and striatum of the mammal.

2. The use of claim 1, wherein the rAAV particle is to be administered to the putamen of each hemisphere of the striatum.

3. The use of claim 1, wherein the heterologous nucleic acid is expressed in the frontal cortex, occipital cortex, and/or layer IV of the mammal.

4. The use of claim 1, wherein the rAAV particle undergoes retrograde or anterograde transport in the cerebral cortex.

5. The use of claim 1, wherein the heterologous nucleic acid is further expressed in the thalamus, subthalamic nucleus, globus pallidus, substantia nigra and/or hippocampus.

6. The use of claim 1, wherein the rAAV vector comprises the heterologous nucleic acid flanked by one or more AAV inverted terminal repeat (ITR) sequences.

7. The use of claim 6, wherein the ITR and the capsid of the rAAV particle are derived from the same AAV serotype.

8. The use of claim 6, wherein the ITR and the capsid of the rAAV viral particles are derived from different AAV serotypes.

9. The use of claim 1, wherein the rAAV vector is a self-complementary rAAV vector.

10. The use of claim 1, wherein the therapeutic polypeptide is amino acid decarboxylase.

11. The use of claim 10, wherein the heterologous nucleic acid encoding amino acid decarboxylase is operably linked to a cytomegalovirus immediate early promoter.

12. The use of claim 1, wherein the rAAV particle is to be delivered by stereotactic delivery.

13. The use of claim 1, wherein the rAAV particle is to be delivered to the striatum by convection enhanced delivery.

14. The use of claim 13, wherein the rAAV particle is to be delivered using a convection enhanced delivery system comprising a cannula.

15. The use of claim 14, wherein the rAAV particle is to be delivered in a composition to be administered to the striatum at a rate of greater than 1 uL/min to about 5 uL/min.

16. The use of claim 15, wherein delivery of the composition is monitored by MRI.

17. The use of claim 14, wherein positioning of the cannula is monitored by MRI.

18. The use of claim 14, wherein more than one cannula is used.

19. The use of claim 14, wherein the cannula is a stepped cannula.

20. A use of a recombinant adeno-associated viral (rAAV) particle comprising an AAV serotype 2 (AAV2) capsid in the manufacture of a medicament for treating a disorder of the central nervous system of a mammal, wherein administration of the rAAV particle comprising an AAV serotype 2 (AAV2) capsid to the central nervous system of a mammal comprising

using a convection enhanced delivery system comprising a cannula to deliver a composition comprising the rAAV particle to the putamen of each hemisphere of the striatum at a rate of greater than 1 uL/min to about 5 uL/min,

wherein positioning of the cannula is monitored by MRI,

wherein the rAAV particle comprises an rAAV vector comprising a heterologous nucleic acid encoding amino acid decarboxylase and the rAAV vector is operably linked to a cytomegalovirus immediate early promoter, and

wherein the heterologous nucleic acid is expressed in at least the cortical structures and striatum of the mammal.