Claims

1. Use of ~~a~~ virus like particles (VLP) derived from virus protein 1 of John Cunningham virus (JC-VP1)~~a human polyoma virus~~ comprising a ~~drug~~plasmid in the manufacture of a medicament for the treatment or diagnosis of a central nervous system (CNS) disease.

~~2. The use according to claim 1, whereas the VLP is derived from JCV.~~

~~3.~~2. The use according to claim 1~~ or 2~~, ~~whereas~~wherein the VLP crosses the blood-brain barrier to enter the CNS together with the ~~drug~~plasmid encapsulated by the VLP.

~~4.~~3. The use according to at least one of the above claims, ~~whereas~~wherein the VLP comprising the ~~drug~~plasmid crosses the physiologically intact blood-brain barrier.

~~5.~~4. The use according to at least one of the above claims, ~~whereas~~wherein the CNS disease is a neurological, neuronal or neurodegenerative disorder.

~~6. The use according to at least one of the above claims, whereas the VLP is composed of VP1 proteins of JC virus.~~

~~7.~~5. The use according to at least one of the above claims, ~~whereas~~ wherein the VLP is to be administered by a route which allows a systemic effect of the drug.

~~8.~~6. The use according to at least one of the above claims, ~~whereas~~ wherein the VLP is to be administered intravenously.

~~9.~~7. The use according to at least one of the above claims, ~~whereas the VLP comprises VP1 and/or VP2,~~ wherein the JC-VP1 comprises an amino acid sequence which is at least 80% identical to the amino acid sequence according to SEQ ID NO: 1 over its entire length ~~and/or wherein the VP2 comprises an amino acid sequence which is at least 80% identical to the amino acid sequence according to SEQ ID NO: 3 over its entire length~~.

~~10.~~8. The use according to at least one of the above claims, ~~whereas~~wherein the ~~drug~~plasmid is selected from the group consisting of a cytotoxic agent, a detectable agent such as a radionuclide, a protein, a peptide and a nucleic acid, in particular selected from the group consisting of nucleic acids encoding a desired protein such as mRNA, cDNA, a plasmid or vector; inhibitory nucleic acids such as siRNA or miRNA; and nucleic acids having catalytic activity such as a ribozyme.

~~11. The use according to at least one of the above claims, whereas the VLP is loaded with the drug.~~

~~12.~~9. ~~Use of a pharmaceutical composition in the manufacture of a medicament for the treatment or diagnosis of a CNS disease~~The use according to at least one of the above claims, ~~whereas~~wherein ~~the pharmaceutical composition comprises a VLP according to any of the above claims wherein at least 1%, preferably at least 15%, more preferably at least 50%, in particular preferred~~ at least 95% of the total amount of ~~drug~~plasmid is fully encapsulated in the hull of the VLP.

~~13.~~10. The use according to claim ~~12~~ 9, wherein the VLP~~s~~ are non-aggregated.

~~14. The use according to claim 12 or 13, whereas the pharmaceutical composition is to be administered intravenously.~~

~~15.~~11. The use according to at least one of the claims ~~12~~9 and~~to~~ ~~14~~10, ~~whereas~~wherein ~~and/or~~ the VLP crosses the blood-brain barrier to enter the CNS together with the ~~drug~~plasmid encapsulated by the VLP.

~~16.~~12. Pharmaceutical composition for use in the treatment or diagnosis of ~~a~~ the CNS disease, ~~whereas~~wherein the pharmaceutical composition comprises ~~a~~ the VLP according to any one of ~~the above~~ claims 1 to 8, wherein ~~at least 1%, preferably at least 15%, more preferably at least 50%, in particular preferred~~ at least 95% of the total amount of ~~drug~~plasmid is fully encapsulated in the hull of the VLP.

~~17.~~13. Virus like particles (VLP) derived from virus protein 1 of John Cunningham virus (JC-VP1) ~~a human polyoma virus~~ comprising a ~~drug~~plasmid for use in the treatment or diagnosis of a central nervous system (CNS) disease.