

Claims

1. A pharmaceutical composition comprising a peroxisome proliferator activated receptor (PPAR) modulator and an polymeric nanocarrier component, wherein the polymeric nanocarrier component is capable of solubilising the PPAR modulator in an aqueous medium and, wherein in the polymeric nanocarrier component is a micelle forming non-ionic surfactant.
2. A composition according to claim 1, wherein the micelle forming surfactant is selected from one or more of D- α -tocopherol polyethylene glycol 1000 succinate, PEGylated phospholipid derivatives (such as DSPE-PEG, DSPS-PEG, PLGA-PEG etc.), poloxamers (such as Lutrol F68, Lutrol F127 etc.), poly(lactic-co-glycolic acid) (PLGA), chitosan derivatives (chitosan-PEG etc.) or biodegradable polymer-PEG.
3. A composition according to claim 1 or 2, wherein the polymeric nanocarrier component further comprises one or more additional materials selected from ethylphosphatidylcholine and cationic lipids, such as N-[1-(2,3-Dioleoyloxy)propyl]-N,N,N-trimethylammonium methylsulfate (DOTAP), 18:1 DGS-NTA(Ni) [1,2-dioleoyl-sn-glycero-3-[(N-(5-amino-1-carboxypentyl)iminodiacetic acid)succinyl] or Solutol HS.
4. A composition according to any preceding claim, wherein the composition is in the form of a micellar composition.
5. A composition according to claim 4, wherein the micelles have a diameter of about 30 nm or less.
6. A composition according to any preceding claim, wherein the composition is in the form of a ternary system comprising an aqueous continuous phase, the PPAR modulator and polymeric nanocarrier component being predominantly present in a disperse phase distributed therein.
7. A composition according to any preceding claim which is sterile.

8. A composition according to any preceding claim, wherein the PPAR modulator is a PPAR-gamma agonist or a compound having PPAR-gamma agonist activity.
9. A composition according to any preceding claim, wherein the PPAR modulator is a thiazolidinedione, curcumin or resveratrol.
10. A composition according to claim 9, wherein the PPAR modulator is selected from one or more of pioglitazone, rosiglitazone, lobeglitazone, ciglitazone, darglitazone, englitazone, netoglitazone, rivoglitazone, Phytocannabinoid Δ^9 -THCA and troglitazone.
11. A composition according to any preceding claim, further comprising one or more pharmaceutically acceptable carriers or excipients.
12. A composition according to any preceding claim, which is suitable for non-parenteral delivery, e.g., topical delivery or oral delivery, or parenteral delivery.
13. A composition according to any preceding claim, which is suitable for intranasal delivery.
14. A composition according to any preceding claim for use in therapy.
15. A composition according to any preceding claim for use in the treatment or prevention of a CNS disorder.
16. A composition for use according to claim 15, wherein the CNS disorder is a neurodegenerative disorder, a retinal disorder or a brain disorder.
17. A composition for use according to claim 16, wherein the neurodegenerative condition is Parkinson's Disease, Alzheimer's Disease or Huntington's Disease.
18. A composition for use according to any of claims 15 to 17, wherein the composition is to be administered topically, such as ocularly, or intranasally.

19. A method for treating a CNS disorder, the method comprising administering a composition according to any of claims 1 to 13 to a patient.
20. The method of claim 19, wherein the CNS disorder is a neurodegenerative disorder, a retinal disorder or a brain disorder.
21. The method of claim 20, wherein the neurodegenerative condition is Parkinson's Disease, Alzheimer's Disease or Huntington's Disease.
22. The method of any of claims 19 to 21, wherein the composition is administered topically, such as ocularly, intranasally or dermally.
23. A method for preparing a PPAR agonist composition according to any of claims 1 to 13, the method comprising: (i) dissolving one or more polymeric nanocarrier components in a first solvent mixture; (ii) dissolving a PPAR modulator in a second solvent mixture; (iii) combining the dissolved polymeric nanocarrier component and dissolved PPAR modulator and drying the combination to form a film; (iv) rehydrating the film with buffer to form a micellar solution; (v) sonicating the micellar solution to form a suspension; (vi) stabilising the suspension; and (vii) filtering the suspension to remove unencapsulated PPAR modulator.
24. The method of claim 23 wherein the first solvent mixture is ethanol.
25. The method of claim 23 or 24, wherein the first and second solvent mixtures are the same.
26. A composition as hereinbefore described with reference to the examples.