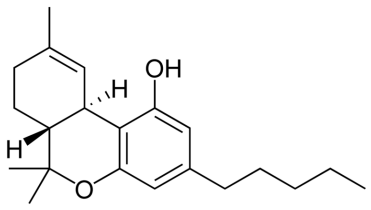
THC	Tetrahydrocannabinol	

[0064] Phytocannabinoids can be found as either the neutral (decarboxylated form) or the carboxylic acid form depending on the method used to extract the cannabinoids. For example it is known that heating the carboxylic acid form will cause most of the carboxylic acid form to decarboxylate into the neutral form.

[0065] Where a synthetic phytocannabinoid is used the term is intended to include compounds, metabolites or derivatives thereof, and pharmaceutically acceptable salts of such compounds.

[0066] The term “pharmaceutically acceptable salts” refers to salts or esters prepared from pharmaceutically acceptable non-toxic bases or acids, including inorganic bases or acids and organic bases or acids, as would be well known to persons skilled in the art. Many suitable inorganic and organic bases are known in the art.

[0067] Phytocannabinoids can occur as either the pentyl (5 carbon atoms) or propyl (3 carbon atoms) variant. Initially it was thought that the propyl and pentyl variants would have similar properties, however recent research suggests this is not true. For example the phytocannabinoid THC is known to be a CB1 receptor agonist whereas the propyl variant THCV has been discovered to be a CB1 receptor antagonist meaning that it has almost opposite effects. This is confirmed by Pertwee (2000) in Cannabinoid receptor ligands: clinical and neuropharmacological considerations relevant to future drug discovery and development,

[0068] It is an object of the present invention to identify compositions which are safe and efficacious for use in the treatment of neurological conditions, characterized by hyper-excitability of the central nervous system, convulsions or seizures such as occur in epilepsy.

[0069] Indeed, a major drawback with existing standard anti-epileptic drugs (SAEDs) is that 30% are refractory to existing treatments and there are also notable motor side effects in the existing therapies. Thus it is desirable to use compounds or combinations which reduce or are absent of such side effects.

SUMMARY

[0070] In accordance with a first example of the present disclosure there is provided a composition comprising or consisting essentially of the phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD). In one aspect, the present disclosure provides a use of a composition comprising phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) in the manufacture of a medicament for treating epilepsy, wherein the composition is absent of cannabinoids tetrahydrocannabivarin (THCV) and tetrahydrocannabinol (THC), wherein the CBDV and CBD are present in a ratio of from 5:1 to 1:1 (CBDV:CBD). In another aspect, the present disclosure provides a use of a composition comprising phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) in the manufacture of a medicament for treating epilepsy, wherein the composition is absent of cannabinoids tetrahydrocannabivarin (THCV) and tetrahydrocannabinol (THC), wherein 58 mg/kg to 200 mg/kg of CBDV is to be administered to the subject, wherein the CBDV and CBD are present in a ratio of from 5:1 to 1:1 (CBDV:CBD).

[0071] Preferably the composition further comprising one or more excipients.

[0072] Preferably the composition further comprises at least one non-cannabinoid component of cannabis. More preferably the at least one non-cannabinoid component of cannabis is or comprises a terpene.

[0073] With reference to terpenes it should be noted that terpenes can be classified further into monoterpenes or sesquiterpenes. Common monoterpenes found in cannabis include myrcene and pinene and common sesquiterpenes found in cannabis include caryophyllenes and humulene.

[0074] Preferably the composition comprises or consists essentially of CBDV, CBD and one or more cannabichromene type compounds. More preferably the one or more cannabichromene type compounds is cannabichromene propyl variant (CBCV) and / or cannabichromene (CBC).

[0075] Preferably the composition is absent or substantially absent of any other cannabinoids. More preferably the composition is absent or substantially absent of the cannabinoids tetrahydrocannabivarin (THCV) and / or tetrahydrocannabinol (THC).

[0076] In particular the composition should comprise less than 0.3% (w/w) THC.

[0077] Preferably the composition comprises or consists essentially of the cannabinoids CBDV and CBD in a ratio of from 7:1 to 1:2 (CBDV:CBD). More preferably the CBDV and CBD are present in a ratio of from 5:1 to 1:1 (CBDV:CBD). More preferably still the CBDV and CBD are present in a ratio of 4.5:1 to 2:1 (CBDV:CBD).

[0078] Preferably the composition is packaged for delivery in a unit dosage form. More preferably the unit dosage form comprises from 500 to 2000 mg CBDV and from 100 to 600 mg CBD.

[0079] A “unit dose” is herein defined as a maximum dose of medication that can be taken at any one time or within a specified dosage period such as for example, 4 hours.

[0080] In a further example of the present disclosure the composition further comprises a standard anti-epileptic drug (SAED).

[0081] A standard anti-epileptic drug is a medicament with anti-convulsant activity that is or has been used in the treatment of epilepsy.

[0082] In accordance with a second example of the present disclosure there is provided an extract or BDS comprising the phytocannabinoids CBDV and CBD but substantially absent of the cannabinoids THCV and THC.

[0083] The cannabinoids THCV and THC may not desirable components of a composition for use in the treatment of epilepsy for several reasons. In the case of THCV the fact that this phytocannabinoid is a known CB1 receptor antagonist gives rise to questions over the appropriateness of THCV for use in the treatment of epilepsy, particularly when one considers the evidence provided by Deshpande *et al*. that CB1 antagonists may be pro-convulsant and may give rise to suicidal tendencies. In the case of THC it is not clearly known whether THC is a pro- or anti-convulsant, however it is widely acknowledged that some of the side effects caused by THC, such as psychosis and anxiety, are particularly undesirable.

[0084] Preferably the extract or BDS further comprises one or more non-cannabinoid component(s).

[0085] In accordance with a third example of the present disclosure there is provided a combination of the phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) for use in the treatment of neurological conditions, characterised by hyper-excitability of the central nervous system, convulsions or seizures.

[0086] Preferably the combination of the the neurological condition is epilepsy. More preferably the type of epilepsy to be treated is generalised seizure.

[0087] Preferably the combination of the phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) further comprises a standard anti-epileptic drug (SAED).

[0088] Preferably the combination of the phytocannabinoids CBDV and CBD are absent or substantially absent of any other cannabinoids. More preferably the composition is absent or substantially absent of the cannabinoids tetrahydrocannabivarin (THCV) and / or tetrahydrocannabinol (THC).

[0089] In accordance with a fourth example of the present disclosure there is provided the use of a combination of the phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) in the manufacture of a medicament for use in the treatment of neurological conditions, characterised by hyper-excitability of the central nervous system, convulsions or seizures.

[0090] Preferably the medicament is absent or substantially absent of any other cannabinoids. More preferably the composition is absent or substantially absent of the cannabinoids tetrahydrocannabivarin (THCV) and / or tetrahydrocannabinol (THC).

[0091] In accordance with a fifth example of the present disclosure there is provided a method for the treatment of neurological conditions, characterised by hyper-excitability of the central

CLAIMS

1. Use of a composition comprising phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) in the manufacture of a medicament for treating epilepsy, wherein the composition is absent of cannabinoids tetrahydrocannabivarin (THCV) and tetrahydrocannabinol (THC), wherein the CBDV and CBD are present in a ratio of from 5:1 to 1:1 (CBDV:CBD).

2. The use of claim 1, wherein the epilepsy to be treated is generalised seizure.

3. The use of claim 1, wherein the composition further comprises one or more excipients.

4. The use of claim 1, wherein the composition further comprises at least one non-cannabinoid component of cannabis.

5. The use of claim 4, wherein the at least one non-cannabinoid component of cannabis is or comprises a terpene.

6. The use of claim 1, wherein the phytocannabinoids comprise, or consist essentially of CBDV, CBD and one or more cannabichromene type compounds.

7. The use of claim 6, wherein the one or more cannabichromene type compounds is cannabichromene propyl variant (CBCV) and / or cannabichromene (CBC).

8. The use of claim 1, wherein the CBDV and CBD are present in a ratio of 4.5:1 to 2:1 (CBDV:CBD).

9. The use of claim 1, wherein the composition is a unit dosage form comprising from 500 to 2000 mg CBDV.

10. The use of claim 9, wherein the composition is a unit dosage comprising from 100 to 600 mg CBD.

11. The use of claim 1, further comprising a standard anti-epileptic drug (SAED).

12. Use of a composition comprising phytocannabinoids cannabidivarin (CBDV) and cannabidiol (CBD) in the manufacture of a medicament for treating epilepsy, wherein the composition is absent of cannabinoids tetrahydrocannabivarin (THCV) and tetrahydrocannabinol (THC), wherein 58 mg/kg to 200 mg/kg of CBDV is to be administered to the subject, wherein the CBDV and CBD are present in a ratio of from 5:1 to 1:1 (CBDV:CBD).

13. The use of claim 12, wherein the epilepsy to be treated is generalised seizure.

14. The use of claim 12, wherein the composition further comprises one or more excipients.

15. The use of claim 12, wherein the composition further comprises at least one non-cannabinoid component of cannabis.

16. The use of claim 15, wherein the at least one non-cannabinoid component of cannabis is or comprises a terpene.

17. The use of claim 12, wherein the phytocannabinoids comprise, or consist essentially of CBDV, CBD and one or more cannabichromene type compounds.

18. The use of claim 17, wherein the one or more cannabichromene type compounds is cannabichromene propyl variant (CBCV) and / or cannabichromene (CBC).

19. The use of claim 12, wherein the CBDV and CBD are present in a ratio of 4.5:1 to 2:1 (CBDV:CBD).