blackcurrant extract, suggesting removal or degradation of an unknown bioactive may be responsible for much of the MAO activity. Indeed, it has been thought for some time that some betaCs in blackcurrant could be a strong candidate for an observed MAO inhibitory activity sometimes observed in BC juice (Budzikiewicz, 1994, and Herraiz, 2006, 2018).

In particular, it is of real interest to identify compounds with MAO inhibitory activity in fruit that are naturally present that could then be utilised, isolated, protected, extracted, synthetically replicated or recombinantly produced / expressed through cellular fermentation, or heightening the levels in the fruit or fruit juice of the compound(s) via selective breeding or other known genetic modification techniques.

It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

All references, including any patents or patent applications cited in this specification are hereby incorporated by reference. No admission is made that any reference constitutes prior art. The discussion of the references states what their authors assert, and the applicants reserve the right to challenge the accuracy and pertinency of the cited documents. It will be clearly understood that, although a number of prior art publications are referred to herein, this reference does not constitute an admission that any of these documents form part of the common general knowledge in the art, in New Zealand or in any other country.

Throughout this specification, the word "comprise", or variations thereof such as "comprises" or "comprising", will be understood to imply the inclusion of a stated element, integer or step, or group of elements integers or steps, but not the exclusion of any other element, integer or step, or group of elements, integers or steps.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

SUMMARY

An aspect of the present disclosure provides use of sarmentosin or an ester(s) thereof, in the manufacture of a medicament for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

Another aspect of the present disclosure provides a use of sarmentosin or an ester(s) thereof, in the manufacture of a medicament for preventing or treating a disease or condition, or for the maintenance or improvement of a non-clinical cognitive state or condition associated with MAO-A or MAO-B enzyme activity.

A further aspect of the present disclosure provides a composition formulated as a food or

beverage, pharmaceutical composition, nutraceutical or an extract from a plant material, wherein the composition includes sarmentosin or an ester(s) thereof, and when the composition is used for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

Another aspect of the present disclosure provides a use of sarmentosin or an ester(s) thereof, or a plant material, an extract or a composition containing same, in the manufacture of a medicament for the inhibition of monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B) in a person in need thereof.

A further aspect of the present disclosure provides a use of sarmentosin or ester(s) thereof, or a plant material, an extract or a composition containing the same, in the manufacture of a medicament for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

Another aspect of the present disclosure provides a blackcurrant fruit, blackcurrant juice, blackcurrant extract, or isolate including an effective amount of sarmentosin or ester(s) thereof, for use in inhibiting MAO-A or MAO-B.

What we claim is:

1. A use of sarmentosin or an ester(s) thereof, in the manufacture of a medicament for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

2. A use of sarmentosin or an ester(s) thereof, in the manufacture of a medicament for preventing or treating a disease or condition, or for the maintenance or improvement of a non-clinical cognitive state or condition associated with MAO-A or MAO-B enzyme activity.

3. The use in claim 1 wherein the sarmentosin or its ester(s) thereof is within a plant material, an extract or a composition.

4. The use as claimed in claim 2 wherein the plant material is blackcurrant (*Ribes nigrum*).

5. The use as claimed in claim 1, wherein the sarmentosin or an ester thereof provides reversible MAO inhibition.

6. The use as claimed in claim 1, wherein the sarmentosin ester is selected from the group consisting of nigrumin-p- coumarate, nigrumin caffeate and / or nigrumin ferulate and derivatives thereof.

7. The use as claimed in claim 1, wherein the extract is a polar fraction or component extracted from the selected source of the sarmentosin or an ester thereof.

8. A composition formulated as a food or beverage, pharmaceutical composition, nutraceutical or an extract from a plant material, wherein the composition includes sarmentosin or an ester(s) thereof, and when the composition is used for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

9. The composition as claimed in claim 6 wherein the amount of sarmentosin is at least 0.005 mg/g in the composition.

10. The composition as claimed in claim 6 wherein the amount of sarmentosin is between about 0.005 to 70 mg/g in the composition.

11. A use of sarmentosin or an ester(s) thereof, or a plant material, an extract or a composition containing same, in the manufacture of a

medicament for the inhibition of monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B) in a person in need thereof.

12. The use as claimed in claim 10 for the treatment or prevention of a disease or condition associated with MAO-A or MAO-B enzyme activity in a person in need thereof.

13. The use as claimed in claim 10 for the improvement, maintenance or prevention of mood, anxiety, social anxiety, fatigue, cognitive performance or function, exercise performance, attention / alertness, calmness, mental clarity, executive function, working memory, secondary memory, mood, stress, stress reactivity or to provide a nootropic effect.

14. Use of sarmentosin or ester(s) thereof, or a plant material, an extract or a composition containing the same, in the manufacture of a medicament for inhibiting monoamine oxidase enzyme A (MAO-A) and/or monoamine oxidase enzyme B (MAO-B).

15. The use as claimed in claim 14 for treating or preventing any disease or condition associated with MAO-A or MAO-B enzyme activity.

16. The use as claimed in claim 14 for the improvement, maintenance or prevention of a non-clinical outcome selected from the group consisting of mood, anxiety, social anxiety, fatigue, cognitive performance or function, exercise performance, attention / alertness, calmness, mental clarity, executive function, working memory, secondary memory, mood, stress, stress reactivity, nootropic effects and combinations thereof.

17. The use as claimed in any one of claims 11 to 13, or 14 to 16, wherein the use modulates, maintains or increases a neurotransmitter selected from the group consisting of dopamine, serotonin, adrenalin and tyramine.

18. The use of claim 12 or claim 15 wherein the disease or condition is any neurological or psychiatric condition or ailment associated with MAO-A or MAO-B enzyme activity.

19. The use of claim 12 or 15 or 16 wherein the disease or condition is selected from the group consisting of depression, atypical depression, panic, social anxiety, bipolar disorder, post-traumatic stress disorder

(PTSD), Obsessive Compulsive Disorder (OCD), adult ADHD, Alzheimer’s disease, Dementia, Parkinson's disease and Huntington’s disease.

20. The use as claimed in any one claims 11 to 19, wherein the daily dosage of sarmentosin or its ester(s) thereof is at least 1 mg, and more preferably between 1 to 20 mg for a non-clinical use.

21. The use as claimed in any one claims 11 to 19, wherein the daily dosage of sarmentosin or its ester(s) thereof is at least 20 mg for a clinical use.

22. The use as claimed in any one of claims 11 to 19, wherein the daily dosage of sarmentosin or its ester(s) thereof is between 20 to 200 mg for a clinical use, or more preferably between 20 to 80 mg for a clinical use.

23. A blackcurrant fruit, blackcurrant juice, blackcurrant extract, or isolate including an effective amount of sarmentosin or ester(s) thereof, for use in inhibiting MAO-A or MAO-B.