The standard way alcohol is consumed is by drinking, usually over a few hours. In the case of beers/lagers, alcohol (i.e., ethanol) is provided as relatively dilute solution, wines are stronger, and spirits contain the maximum alcohol concentration.

One approach to reduce or abolish the undesired effects of ethanol is to reduce the concentration of alcohol in drinks. Dealcoholized beverages have been known for nearly 100 years, and are disclosed, for example, in U.S. Patent Nos. 1,390,710, 1,256,894, 6,472,009, 1,401,700, 4,999,209, and 4,612,916. While removing alcohol may seem a practical option for beers, in some cases, especially in wine and spirits, there is a marked deterioration in taste, bouquet, and other qualities of the beverage due to processes performed to eliminate or reduce alcohol content, such as boiling or steaming.

Another approach which has been practiced is the safer alcohol approach, which utilizes drugs that act in a similar way to alcohol but are free of some of its immediate adverse effects, such as gastric irritation, and do not produce the longer-term effects such as cirrhosis, cardiomyopathy and dementia. However, all the drugs had limited use due to development of dependence thereon, and/or abuse thereof.

There is an unmet need for "safer" consumption of alcoholic beverages that would not deprive the drinker from the pleasure and psychotropic and psychoactive effects provided by drinking alcohol, yet, would reduce or even be devoid of the adverse effects associated with alcohol consumption, particularly with intoxication.

SUMMARY

In an example of the present disclosure, an alcoholic food product is provided comprising an edible base material, which may be a liquid, solid or semi-solid edible substance, for example, liquid, alcohol, and at least one neurotransmitter and/or at least one neurotransmitter precursor. The food product thus provided is an alcoholic food product, namely a food product that essentially contains a certain amount of alcohol for example, from about 0.5% to about 98% by volume or by weight. The inclusion of a neurotransmitter and/or a precursor thereof in the alcoholic food product, enriches the alcoholic food product with certain qualities which impart it the ability to effect certain desired psychotropic and psychoactive effects upon consumption thereof.

In one aspect, the present disclosure refers to an alcoholic food product comprising an edible base material comprising alcohol, and a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-phenylalanine, L-tyrosine and levodopa, wherein the amount of alcohol is at least one of:

(a) from 3% to 8% by volume or by weight;

(b) from 5% to 10% by volume or by weight;

(c) from 8% to 12% by volume or by weight;

(d) from 10% to 15% by volume or by weight;

(e) from 15% to 25% by volume or by weight;

(f) from 20% to 30%; by volume or by weight or

(g) from 30% to 50% by volume or by weight,

and wherein the amount of the dopamine precursor is from 350 mg/L to 5000 mg/L, and the edible base material is a liquid, solid or semi-solid edible substance.

In some examples, a disclosed enriched alcoholic food product is an enriched alcoholic beverage such as beer, wine, spirit, cider, perry and alcopop.

In another aspect, the present disclosure refers to an alcoholic beverage comprising a base liquid substance comprising alcohol, and a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-phenylalanine, L-tyrosine and levodopa, wherein the amount of alcohol is at least one of:

(a) from 3% to 8% by volume or by weight;

(b) from 5% to 10% by volume or by weight;

(c) from 8% to 12% by volume or by weight;

(d) from 10% to 15% by volume or by weight;

(e) from 15% to 25% by volume or by weight;

(f) from 20% to 30%; by volume or by weight or

(g) from 30% to 50% by volume or by weight,

and the amount of the dopamine precursor is from 350 mg/L to 5000 mg/L.

In another aspect, the present disclosure refers to an alcoholic beverage comprising a base liquid substance, alcohol, a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-tyrosine and levodopa, and caffeine.

The neurotransmitter may be, for example, norepinephrine, epinephrine, serotonin, dopamine, endorphin, acetylcholine, gamma-aminobutyric acid (GABA), and any combination thereof. The neurotransmitter precursor may be, for example, a norepinephrine precursor, for example dopamine; an epinephrine precursor; a serotonin precursor, for example, 5-hydroxytriptophan; a dopamine precursor such as L-phanylalanina, L-tyrosine or levodopa; an endorphin precursor; an acetylcholine precursor; or a gamma-aminobutyric acid (GABA) precursor, and any combination thereof.

In exemplary examples, a disclosed enriched alcoholic beverage comprises the dopamine precursor tyrosine, in amounts ranging, e.g., from about 10 mg to about 5000 mg per 1 liter, for example, from about 100 mg/L to about 1000 mg/L.

A contemplated enriched alcoholic food product, for example, enriched alcoholic beverage, may further comprise one or more psychostimulant substances, namely, a substance that is directly or indirectly involved in enhancement of a neurotransmitter synthesis and/or stability, inhibition of degradation of a neurotransmitter and/or inhibition of reuptake of a neurotransmitter. Such a psychostimulant is exemplified in some examples, by caffeine, wherein the amount of caffeine in a disclosed enriched alcoholic food product may be from about 10 mg/L to about 750 mg/L.

In exemplary examples, an enriched beer is provided, comprising tyrosine and caffeine, for example, ale, stout, porter, or lager.

In another aspect, the present disclosure refers to an alcoholic beverage comprising:

(i) an alcoholic base beverage containing alcohol in an amount which is at least one of: from 8% to 12% by volume, or 10% by volume;

(ii) tyrosine in an amount which is at least one of: from 200 mg/L to 500 mg/L, or from 350 mg/L to 450 mg/L;

(iii) caffeine in an amount of from 140 mg/L to 150 mg/L; and

(iv) a flavorant.

The alcoholic food product and/or the enriched alcoholic beverage, upon consumption thereof, exerts one or more positive psychoactive effects and/or one or more positive psychotropic effects which may commence 5 minutes and last up to 24 hours, or even up to 48 hours after alcohol consumption. For example, consumption of a disclosed enriched alcoholic beverage such as beer may promote enhanced and prolonged sense of euphoria.

A contemplated enriched beer, wine, spirit, alcopop and/or cider provided herein may exert upon a consumer stimulant effects such as elevated mood (high spirit), energy, excitement, talkativeness, vigorous and vitality which exceed in intensity and duration of similar effects exerted by a corresponding non-enriched beer, wine, spirit, alcopop or cider, while reducing intoxication effects and sedative effects such as difficulty in concentrating,

down feeling, heavy head, heavy body, sedative, slow thinking, and sluggishness compared to corresponding non-enriched alcoholic beverages.

Also provided herein is a process for the preparation of an enriched alcoholic beverage, such as beer, wine, whisky, vodka a liquor, comprising combining a base alcoholic liquid with one or more neurotransmitter precursors, and, optionally, one or more psychostimulant substances.

Unless otherwise defined, all technical and/or scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which the disclosure pertains. Although methods and materials similar or equivalent to those described herein can be used in the practice or testing of examples of the disclosure, exemplary methods and/or materials are described below. In case of conflict, the patent specification, including definitions, will control. In addition, the materials, methods, and examples are illustrative only and are not intended to be necessarily limiting.

BRIEF DESCRIPTION OF THE FIGURES

[0001] Some embodiments of the invention are herein described, by way of example only, with reference to the accompanying drawings. With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of embodiments of the invention. In this regard, the description taken with the drawings makes apparent to those skilled in the art how embodiments of the invention may be practiced.

[0002] In the drawings:

Figs. 1A-1B are bar graphs showing STIM (short for "stimulant effects") values obtained in an exemplary Biphasic Alcohol Effects Scale (BAES) test conducted with enriched beer of the disclosure (1B) and a corresponding non-enriched beer (1A); and

Figs. 2A-2B are bar graphs showing SED (short for "sedative effects") values obtained in an exemplary Biphasic Alcohol Effects Scale (BAES) test conducted with enriched beer of the disclosure (1B) and a corresponding non-enriched beer (1A).

WHAT IS CLAIMED IS:

1. An alcoholic food product comprising an edible base material comprising alcohol, and a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-phenylalanine, L-tyrosine and levodopa, wherein the amount of alcohol is at least one of:

(a) from 3% to 8% by volume or by weight;

(b) from 5% to 10% by volume or by weight;

(c) from 8% to 12% by volume or by weight;

(d) from 10% to 15% by volume or by weight;

(e) from 15% to 25% by volume or by weight;

(f) from 20% to 30%; by volume or by weight or

(g) from 30% to 50% by volume or by weight,

and wherein the amount of the dopamine precursor is from 350 mg/L to 5000 mg/L, and the edible base material is a liquid, solid or semi-solid edible substance.

2. The alcoholic food product according to claim 1, wherein the edible base liquid substance is a base beverage.

3. An alcoholic beverage comprising a base liquid substance comprising alcohol, and a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-phenylalanine, L-tyrosine and levodopa, wherein the amount of alcohol is at least one of:

(a) from 3% to 8% by volume or by weight;

(b) from 5% to 10% by volume or by weight;

(c) from 8% to 12% by volume or by weight;

(d) from 10% to 15% by volume or by weight;

(e) from 15% to 25% by volume or by weight;

(f) from 20% to 30%; by volume or by weight or

(g) from 30% to 50% by volume or by weight,

and the amount of the dopamine precursor is from 350 mg/L to 5000 mg/L.

4. An alcoholic beverage comprising a base liquid substance, alcohol, a neurotransmitter precursor, which is at least one dopamine precursor selected from the group consisting of L-tyrosine and levodopa, and caffeine.

5. The alcoholic food product according to claim 1 or 2, or the alcoholic beverage according to claim 3 or 4, wherein the base liquid substance is at least one of a natural or artificially flavored fruit juice, vegetable juice, fruit syrup, concentrate or nectar from fruits, plant materials, jello, carbonated beverages, caffeinated beverages, specialized flavor formulations emulating the taste of existing beers, wines and spirits, non-alcoholic cocktails, dealcoholized beer, dealcoholized wine, dealcoholized spirit, malt beer, tonic water, water, or a base alcoholic beverage.

6. The alcoholic food product or the alcoholic beverage according to any one of claims 1 to 5, wherein the base liquid substance is an alcoholic beverage selected from the group consisting of beer, wine, spirit, cider, perry and alcopop.

7. The alcoholic beverage according to any one of claims 4 to 6, wherein the amount of alcohol is at least one of:

(a) from 0.5% to 98% by volume or by weight;

(b) from 1% to 20% by volume or by weight;

(c) from 5% to 10% by volume or by weight;

(d) from 8% to 12% by volume or by weight;

(e) from 10% to 15% by volume or by weight;

(f) from 15% to 25% by volume or by weight; or

(g) from 30% to 50% by volume or by weight.

8. The alcoholic food product or the alcoholic beverage according to any one of claims 1 to 7, wherein the dopamine precursor is tyrosine.

9. The alcoholic food product or the alcoholic beverage according to claim 8, wherein the amount of tyrosine is at least one of:

(a) in the range of from 350 mg/L to 5000 mg/L;

(b) in the range of from 350 mg/L to 1000 mg/L;

(c) 350 mg/L;

(d) 500 mg/L; or

(e) 750 mg/L.

10. The alcoholic food product or the alcoholic beverage according to any one of claims 1 to 9, further comprising at least one psychostimulant substance selected from: caffeine, omega-3 fatty acids, magnesium, soluble fibers, folate, olive oil, green tea or theanine extracted therefrom, pregnenolone, uridine-5w-monophosphate, iron, turmeric or curcumin extracted therefrom, oregano, *Rhodiola rosea*, vitamin C, and carbidopa.

11. The alcoholic food product or the alcoholic beverage according to claim 10, wherein the psychostimulant substances is caffeine.

12. The alcoholic food product or the alcoholic beverage according to claim 11, wherein the amount of caffeine is at least one of:

(a) from 10 mg/L to 900 mg/L;

(b) from 10 mg/L to 750 mg/L;

(c) 35 mg/L;

(d) 50 mg/L;

(e) 100 mg/L; or

(f) 350 mg/L.

13. An alcoholic beverage comprising:

(i) an alcoholic base beverage containing alcohol in an amount which is at least one of: from 8% to 12% by volume, or 10% by volume;

(ii) tyrosine in an amount which is at least one of: from 200 mg/L to 500 mg/L, or from 350 mg/L to 450 mg/L;

(iii) caffeine in an amount of from 140 mg/L to 150 mg/L; and

(iv) a flavorant.

14. The alcoholic food product or the alcoholic beverage according to any one of claims 1 to 13, which upon consumption thereof exerts euphoric sensation which lasts from 5 minutes up to 24 hours after consumption.

15. The alcoholic food product or the alcoholic beverage according to any one of claims 1 to 14, which upon consumption thereof exerts at least one positive psychotropic effect selected from (i) higher motivation to work, learn and take part in rewarded activities; (ii) improved concentration and focus; (iii) higher self-confidence; (iv) arousal; (v) wakefulness; (vi) elevated alertness; (vii) improved creativity and creative thinking (viii) curiosity and openness to new experiences; (ix) sense of self-fulfillment, self-contempt; (x) relaxation; (xi) improved capacity to switch attention efficiently between tasks; (xii) improved sociability and extroversion behavior (xiii) better cognitive and/or mental function; and (xiv) emotional and physical sense of well-being, wherein the psychotropic effect lasts from 5 minutes up to 48 hours after consumption.

16. The alcoholic beverage according to any one of claims 3 to 15, selected from the group consisting of a beer, wine, cider, spirit or alcopop.

17. The alcoholic beverage according to claim 16, which is a beer selected from ale, stout, porter, or lager.

18. The alcoholic beverage according to claim 16, which is a wine selected from a dry red wine, dry white wine, semi-dry red wine, semi-dry white wine, rose wine, dessert wine, Port wine, Champagne, sparkling wine and vermouth.

19. The alcoholic beverage according to claim 16, which is a spirit selected from brandy, liquor, saki, Ouzo, arrack, rum, vodka, tequila, schnapps, whiskey, gin, cordial, Cachaça or slivovitz.

20. The alcoholic beverage according to claim 16, which is cider or an alcopop.

21. The alcoholic food product or the alcoholic beverage of claim 13 to 20, wherein the positive psychoactive effect and/or the euphoric sensation exceed the effects and/or sensation exerted by a corresponding beverage, which does not contain tyrosine, while substantially minimizing intoxication effects.