[Non-Patent Document 5] Gut 55, 681-688, 2005

Summary ~~of the Invention~~

[Problems to be Solved ~~by the Invention~~]

An objective of the present ~~invention~~ disclosure is to provide an intestinal regulator with little physical burden, which is highly safe, fast-acting, and persistent.

[Means for Solving the Problems]

The present ~~invention~~ disclosure is based on novel findings of fast-acting and persistent intestine-regulating effects of Profec, which were previously unknown.

Until now, the present inventors conducted many evaluations on Profec with regard to its intestine-regulating effects when Profec was taken for only several weeks at a time. As a result, intake of Profec for two to four weeks was shown to provide a certain effect of improving bowel movement (for example, Non-Patent Documents 3 and 4). In contrast, the present inventors evaluated for the first time, the intestine-regulating effects of Profec over time on subjects of a wide range of ages who are suffering from constipation. Surprisingly, the inventors discovered that significant bowel movement-improving effects were seen one day after initiating Profec intake, and more remarkable bowel movement-improving effects were seen two days after intake. The inventors also found out that during the two-week period of Profec intake, this bowel movement-improving effects did not weaken, and these effects were maintained for at least two weeks after stopping Profec intake.

In an aspect, there is provided a fast-acting intestinal regulator comprising at least one component from among a culture of propionic acid bacteria, DHNA, or an analog thereof.

Basic characteristics and various embodiments of the present ~~invention~~ disclosure are provided below:

[1] A fast-acting intestinal regulator comprising at least one component from among a culture of propionic acid bacteria, DHNA, or an analog thereof.

[2] The fast-acting intestinal regulator of [1], wherein the propionic acid bacteria is *Propionibacterium freudenreichii*.

[3] The fast-acting intestinal regulator of [1] or [2], which is a fast-acting bowel movement-improving agent.

[4] the fast-acting intestinal regulator of any one of [1] to [3], wherein an intestine-regulating effect is obtained within seven days, preferably within two days, more preferably within one day after its intake (administration);

[5] the fast-acting intestinal regulator of any one of [1] to [4], which maintains an intestine-regulating effect for (at least) one week, preferably 1.5 weeks, more preferably two weeks from after stopping its intake (administration);

[6] the fast-acting intestinal regulator of any one of [1] to [5], wherein the intake (dose) per day

is 5 μg or more (for example 5 μg to 100 μg), preferably 6 μg or more (for example 6 μg to 50 μg), and more preferably 6.5 μg or more (for example 6.5 μg to 20 μg), when the converted amount (intake) of DHNA or an analog thereof is used as an indicator;

[7] the fast-acting intestinal regulator of any one of [1] to [6], wherein the content per single packaged form is 5 μg to 100 μg, preferably 6 μg to 50 μg, and more preferably 6.5 μg to 20 μg, when the converted amount (content) of DHNA or an analog thereof is used as an indicator;;

[8] the fast-acting intestinal regulator of any one of [1] to [7], which is taken (administered) together with a collagen peptide; and

[9] the fast-acting intestinal regulator of any one of [1] to [8], further comprising a collagen peptide.

The present ~~invention~~ disclosure further relates to the following embodiments:

[A-1] a method for producing a fast-acting intestinal regulator comprising the step of mixing (using) at least one component from among a culture of propionic acid bacteria, DHNA, or an analog thereof, wherein the propionic acid bacteria is preferably *Propionibacterium freudenreichii* and the fast-acting intestinal regulator is preferably a fast-acting bowel movement-improving agent;

[A-2] the method for producing a fast-acting intestinal regulator of [A-1], wherein an intestine-regulating effect is obtained within seven days, preferably within two days, and more preferably within one day after intake (after administration) of the regulator;

[A-3] the method for producing a fast-acting intestinal regulator of [A-1] or [A-2], wherein an intestine-regulating effect is maintained for (at least) one week, preferably 1.5 weeks, and more preferably two weeks from after stopping intake (administration) of the regulator;

[A-4] the method for producing a fast-acting intestinal regulator of any one of [A-1] to [A-3], wherein the intake (dose) of the regulator per day is 5 μg or more (for example 5 μg to 100 μg), preferably 6 μg or more (for example 6 μg to 50 μg), and more preferably 6.5 μg or more (for example 6.5 μg to 20 μg), when the converted amount (intake) of DHNA or an analog thereof, is used as an indicator; and

[A-5] the method for producing a fast-acting intestinal regulator of any one of [A-1] to [A-4], wherein the content of the regulator per single packaged form is 5 μg to 100 μg, preferably 6 μg to 50 μg, and more preferably 6.5 μg to 20 μg, when the converted amount (content) of DHNA or an analog thereof is used as an indicator.

The present ~~invention~~ disclosure further relates to the following embodiments:

[B-1] use of a culture of propionic acid bacteria or DHNA or an analog thereof in the manufacture of a fast-acting intestinal regulator, wherein the propionic acid bacteria is preferably *Propionibacterium freudenreichii* and the fast-acting intestinal regulator is preferably a fast-acting bowel movement-improving agent;

[B-2] the use of [B-1], wherein an intestine-regulating effect is obtained within seven days, preferably within two days, and more preferably within one day after intake (after administration) of the regulator;

[B-3] the use of [B-1] or [B-2], wherein an intestine-regulating effect is maintained for (at least) one week, preferably 1.5 weeks, and more preferably two weeks from after stopping intake (administration) of the regulator;

[B-4] the use of any one of [B-1] to [B-3], wherein the intake (dose) of the regulator per day is 5 μg or more (for example 5 μg to 100 μg), preferably 6 μg or more (for example 6 μg to 50 μg), and more preferably 6.5 μg or more (for example 6.5 μg to 20 μg), when the converted amount (intake) of DHNA or an analog thereof is used as an indicator; and

[B-5] the use of any one of [B-1] to [B-4], wherein the content of the regulator per single packaged form is 5 μg to 100 μg, preferably 6 μg to 50 μg, and more preferably 6.5 μg to 20 μg, when the converted amount (content) of DHNA or an analog thereof is used as an indicator.

The present ~~invention~~ disclosure further relates to the following embodiments:

[C-1] a culture of propionic acid bacteria or DHNA or an analog thereof for use in developing a fast-acting intestine-regulating effect, wherein the propionic acid bacteria is preferably *Propionibacterium freudenreichii* and the fast-acting intestine-regulating effect is preferably a fast-acting bowel movement-improving effect;

[C-2] the culture of propionic acid bacteria or DHNA or an analog thereof of [C-1], wherein an intestine-regulating effect is obtained within seven days , preferably within two days, and more preferably within one day after intake (after administration) of the regulator;

[C-3] the culture of propionic acid bacteria or DHNA or an analog thereof of [C-1] or [C-2], wherein an intestine-regulating effect is maintained for (at least) one week, preferably 1.5 weeks, and more preferably two weeks from after stopping intake (administration) of the regulator;

[C-4] the culture of propionic acid bacteria or DHNA or an analog thereof of any one of [C-1] to [C-3], wherein the intake (dose) of the regulator per day is 5 μg or more (for example 5 μg to 100 μg), preferably 6 μg or more (for example 6 μg to 50 μg), and more preferably 6.5 μg or more (for example 6.5 μg to 20 μg), when the converted amount (intake) of DHNA or an analog thereof is used as an indicator; and

[C-5] the culture of propionic acid bacteria or DHNA or an analog thereof of any one of [C-1] to [C-4], wherein the content of the regulator per single packaged form is 5 μg to 100 μg, preferably 6 μg to 50 μg, and more preferably 6.5 μg to 20 μg, when the converted amount (content) of DHNA or an analog thereof is used as an indicator.

The present ~~invention~~ disclosure further relates to the following embodiment:

[D-1] a method for developing a fast-acting intestine-regulating effect comprising the step of making a subject take (administering to a subject) an effective amount of at least one component

from among a culture of propionic acid bacteria, DHNA or an analog thereof, wherein the propionic acid bacteria is preferably *Propionibacterium freudenreichii* and the fast-acting intestine-regulating effect is preferably a fast-acting bowel movement-improving effect;

[D-2] the method for developing a fast-acting intestine-regulating effect of [D-1], wherein the intestine-regulating effect is obtained within seven days, preferably within two days, and more preferably within one day after intake (after administration) of the regulator;

[D-3] the method for developing a fast-acting intestine-regulating effect of [D-1] or [D-2], wherein the intestine-regulating effect is maintained for (at least) one week, preferably 1.5 weeks, and more preferably two weeks from after stopping intake (administration) of the regulator;

[D-4] the method for developing a fast-acting intestine-regulating effect of any one of [D-1] to [D-3], wherein the intake (dose) of the regulator per day is 5 μg or more (for example 5 μg to 100 μg), preferably 6 μg or more (for example 6 μg to 50 μg), and more preferably 6.5 μg or more (for example 6.5 μg to 20 μg), when the converted amount (intake) of DHNA or an analog thereof is used as an indicator; and

[D-5] the method for developing a fast-acting intestine-regulating effect of any one of [D-1] to [D-4], wherein the content of the regulator per single packaged form is 5 μg to 100 μg, preferably 6 μg to 50 μg, and more preferably 6.5 μg to 20 μg, when the converted amount (content) of DHNA or an analog thereof is used as an indicator.

In [D-1] to [D-5], medical practices (practices requiring a physician's prescription) are preferably excluded.

[Effects of the Invention]

As described above, probiotics and prebiotics have been generally known to express intestine-regulating effects by regulating the enteric environment when they are taken continuously. Therefore, they have been recognized as components used or intended to be used mainly for preventing constipation. Propionic acid bacteria cultures, or DHNA or an analog thereof which is the active ingredient of the fast-acting intestinal regulator of the present ~~invention~~disclosure, were hitherto known to be prebiotics, but surprisingly, it was revealed for the first time that bowel movement-improving effects developed in a short period of time, which is within one day after intake, and more remarkable bowel movement-improving effects were seen within two days after intake. In addition, the fast-acting intestinal regulators of the present ~~invention~~ disclosure can be produced by mixing a component (food material, etc.) that has been taken by (administered to) humans as food or such. Therefore, a high level of safety is already guaranteed for the fast-acting intestinal regulators of the present ~~invention~~disclosure, and they can thus be taken even ceaselessly (continuously). Thus, it became clear that the fast-acting intestinal regulators of the present ~~invention~~ disclosure can be provided as novel means with little physical burden for