WE CLAIM

1. A composition for screening a material for changing the composition of intestinal microbiota and metabolites of the intestinal microbiota ~~an intestinal environment-improving material~~, comprising: L-cysteine~~,~~ wherein the composition does not include protein and carbohydrate.

2. The composition for screening a material for changing the composition of intestinal microbiota and metabolites of the intestinal microbiota ~~an intestinal environment-improving material~~ of Claim 1, further comprising: mucin.

~~3. The composition for screening an intestinal environment-improving material of Claim 1, wherein the composition does not include protein and carbohydrate.~~

3~~4~~. The composition for screening a material for changing the composition of intestinal microbiota and metabolites of the intestinal microbiota ~~an intestinal environment-improving material~~ of Claim 1,

wherein the intestinal environment-improving material is selected from the group consisting of probiotic, prebiotic, food, health functional food, drug and a mixture thereof.

4~~5~~. A method for screening a material for changing the composition of intestinal microbiota and metabolites of the intestinal microbiota ~~an intestinal environment-improving material~~, comprising:

(a) mixing a composition of Claim 1 with a sample obtained from a subject ;

(b) treating one or more intestinal environment-improving candidate materials in the mixture from the step~~process~~ (a) and culturing; and

(c) analyzing the culture from the step~~process~~ (b) by performing one or more of absorbance analysis, chromatography analysis, next generation sequencing, genetic analysis, and metagenomic analysis.

5~~6~~. The method of claim 4~~5~~, wherein the method is performed in vitro conditions.

6~~7~~. The method of claim 4~~5~~, wherein the culturing in the step~~process~~ (b) is performed under an anaerobic condition for 18 hours to 24 hours.

7~~8~~. The method ~~for screening an intestinal environment-improving material~~ of claim 4~~5~~, wherein the analyzing of the culture in the step~~process~~ (c) is to analyze the content ~~, concentration, or kind~~ of one or more of endotoxin, hydrogen sulfide, short-chain fatty acids (SCFAs) and microbiota-derived metabolites contained in the culture.

8. The method of claim 4,

wherein the analyzing of the culture in the step (c) is to analyze the concentration of one or more of endotoxin, hydrogen sulfide, short-chain fatty acids (SCFAs) and microbiota-derived metabolites contained in the culture.

9. The method of claim 4,

wherein the analyzing of the culture in the step (c) is to analyze the kind of one or more of endotoxin, hydrogen sulfide, short-chain fatty acids (SCFAs) and microbiota-derived metabolites contained in the culture.

10~~9~~. The method of any one of claims 7 to 9 ~~for screening an intestinal environment-improving material of claim 8~~,

wherein the short-chain fatty acid is selected from the group consisting of acetate, propionate, butyrate, isobutyrate, valerate and iso-valerate.

11~~10~~. The method ~~for screening an intestinal environment-improving material~~ of claim 4~~5~~,

wherein the analyzing the culture in the step~~process~~ (c) is to analyze the kind ~~, concentrate, content or diversity change~~ of intestinal microbiota contained in the culture.

12. The method of claim 4,

wherein the analyzing the culture in the step (c) is to analyze the concentrate of intestinal microbiota contained in the culture.

13. The method of claim 4,

wherein the analyzing the culture in the step (c) is to analyze the content of intestinal microbiota contained in the culture.

14. The method of claim 4,

wherein the analyzing the culture in the step (c) is to analyze the diversity change of intestinal microbiota contained in the culture.

15~~11~~. The method ~~for screening an intestinal environment-improving material~~ of claim 4~~5~~, further comprising:

(d) screening a candidate material that increases the content of the short-chain fatty acids, increases the kind ~~and content~~ of beneficial bacteria in the microbiota, decreases the contents of endotoxin and hydrogen sulfide or decreases the kind ~~and content~~ of harmful bacteria in the

microbiota by comparison between the result of analysis from the step~~process~~ (c) and the result of analysis on a control group,~~.~~ wherein the control group comprises a non-treated sample from a subject or a sample treated only with a control material.

16. The method of claim 4, further comprising:

(d) screening a candidate material that increases the content of the short-chain fatty acids, increases the content of beneficial bacteria in the microbiota, decreases the contents of endotoxin and hydrogen sulfide or decreases the content of harmful bacteria in the microbiota by comparison between the result of analysis from the step (c) and the result of analysis on a control group, wherein the control group comprises a non-treated sample from a subject or a sample treated only with a control material.