(1) determination of the fecal occult blood value: determining the occult blood result value X_0 of the fecal sample of a subject using the fecal occult blood test kit, where $X_0 = 1$ when the occult blood result is positive and $X_0 = 0$ when the occult blood result is negative;

(2) using genomic DNA from the feces of the subject as a template, detecting Ct_{marker}, an amplified value of each biomarker and $Ct_{total\ bacteria}$, an amplified value of total bacteria with the primer group in the kit, separately;

(3) calculating a relative content (a Ct value) of each component of the biomarker combination in the total bacteria using the sample according to formula (I), separately,

$$Ct=lg(2^{(Ct_{marker}-Ct_{total\ bacteria})})$$

(I);

(4) calculating a value Y according to a regression equation, and substituting the value Y into formula (II) to calculate a value P, where e is a natural constant,

$$P=\frac{e^Y}{1+e^Y}$$

(II);

(5) interpretation of result: when $P>0.5$, the diagnosis result of colorectal cancer is positive; and when $P\leq 0.5$, the diagnosis result of colorectal cancer is negative.

Preferably, the regression equation in step (4) is shown as formula (III),

$$Y=A+\beta_0X_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4$$

(III);

where, X_0 is the occult blood result value, X_1 is a Ct value of *Peptostreptococcus stomatis*, X_2 is a Ct value of *Fusobacterium nucleatum*, X_3 is a Ct value of *Parvimonas micra* and X_4 is a Ct value of *Bifidobacterium*; A and β_0-β_4 are constants, and A and β_0-β_4 are data obtained from clinical experiments.

Preferably, the regression equation in step (4) comprises any of formula (IV) to formula (VIII):

$$Y=-3.9583+3.1015X_0-0.6478X_1-0.3980X_2+0.2912X_3-0.5130X_4$$

(IV);

$$Y=-2.965+2.7005X_0-1.2309X_1-0.6054X_2+0.3328X_3-0.2359X_4$$

(V);

$$Y=-3.099+1.9907X_0-2.0011X_1-0.3290X_2+0.5476X_3-0.6620X_4$$

(VI);

$$Y=-3.771+4.0089X_0-0.9983X_1-0.4482X_2+0.1288X_3-0.4917X_4$$

Parvimonas micra and *Bifidobacterium*, a reaction buffer system, Mix, ROX and RNase-free ddH_2O. The assay reagent includes a primer group for testing the biomarker combination, and the primer group is shown as the primer pairs (1) to (4) in Example 1. The assay reagent further includes a primer pair for testing total bacteria, and the primer pair is shown as the primer pair (5) in Example 1.

Use method: genomic DNA is extracted from feces of a subject to prepare a fecal genomic DNA template, and the abundances of the biomarkers in a sample are detected with the primer pairs (1) to (5). The existence of the colorectal cancer in the patient is determined according to the abundances of the biomarkers in the sample.

2.2 Kit 2

A kit for detecting colorectal cancer, the kit comprising an assay reagent for a biomarker combination, which includes *Peptostreptococcus stomatis, Fusobacterium nucleatum, Parvimonas micra* and *Bifidobacterium*, and an occult blood test reagent. The assay reagent includes a primer group, a reaction buffer system, Mix, ROX and RNase-free ddH_2O, and the primer group is shown as the primer pairs (1) to (4) in Example 1. The assay reagent further includes a primer pair for testing total bacteria, and the primer pair is shown as the primer pair (5) in Example 1. The occult blood test reagent includes a dilution buffer and a test strip.

Use method:

(1) determination of the fecal occult blood value: determining the occult blood result value X_0 of the fecal sample of a subject using the fecal occult blood test kit, where $X_0 = 1$ when the occult blood result is positive and $X_0 = 0$ when the occult blood result is negative;

(2) using genomic DNA from the feces of the subject as a template, detecting Ct_{marker}, an amplified value of each biomarker and $Ct_{total\ bacteria}$, an amplified value of total bacteria with the primer group in the kit, separately;

(3) calculating a value Y according to a regression equation $Y=A+\beta_0X_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4$ (III), and substituting the value Y into formula (II) to calculate a value P, where e is a natural constant,

Example 1. The occult blood test reagent includes a dilution buffer and a test strip.

Use method:

(1) determination of the fecal occult blood value: determining the occult blood result value X_0 of the fecal sample of a subject using the fecal occult blood test kit, where $X_0 = 1$ when the occult blood result is positive and $X_0 = 0$ when the occult blood result is negative;

(2) using genomic DNA from the feces of the subject as a template, detecting Ct_{marker}, an amplified value of each biomarker and $Ct_{total\ bacteria}$, an amplified value of total bacteria with the primer group in the kit, separately;

(3) calculating a value Y according to a regression equation $Y=A+\beta_0X_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4$ (III), and substituting the value Y into formula (II) to calculate a value P, where e is a natural constant,

$$P=\frac{e^Y}{1+e^Y}$$

(II);

(4) interpretation of result: when P>0.5, the diagnosis result of colorectal cancer is positive; and when P≤0.5, the diagnosis result of colorectal cancer is negative.

Where, in the regression equation $Y=A+\beta_0X_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4$ (III), X_0 is the occult blood result value, X_1 is a Ct value of *Peptostreptococcus stomatis*, X_2 is a Ct value of *Fusobacterium nucleatum*, X_3 is a Ct value of *Parvimonas micra*, and X_4 is a Ct value of *Bifidobacterium*; A and β_0-β_4 are constants and are obtained from analysis of clinical experiment data.

According to analysis of clinical trials, the regression equation is any of formula (IV) to formula (VIII):

$$Y=-3.9583+3.1015X_0-0.6478X_1-0.3980X_2+0.2912X_3-0.5130X_4$$

(IV);

$$Y=-2.965+2.7005X_0-1.2309X_1-0.6054X_2+0.3328X_3-0.2359X_4$$

(V);

$$Y=-3.099+1.9907X_0-2.0011X_1-0.3290X_2+0.5476X_3-0.6620X_4$$

What is claimed is:

1. A biomarker combination for colorectal cancer, wherein the biomarker combination comprises *Peptostreptococcus stomatis*, *Fusobacterium nucleatum*, *Parvimonas micra* and *Bifidobacterium*.

2. A kit for detecting colorectal cancer, wherein the kit comprises an assay reagent for the biomarker combination according to claim 1, and the assay reagent is used for quantifying each component of the biomarker combination of claim 1.

3. The kit according to claim 2, wherein the principle followed by the assay reagent is real-time quantitative PCR.

4. The kit according to claim 3, wherein the assay reagent comprises a primer group for amplifying the biomarker combination according to claim 1, and the primer group comprises a primer pair for amplifying each component of the biomarker combination of claim 1.

5. The kit according to claim 4, wherein the primer group has nucleotide sequences as shown in SEQ ID NO.1-8.

6. The kit according to claim 5, wherein the assay reagent further comprises a primer pair for amplifying total bacteria.

7. The kit according to claim 6, wherein the primer pair for amplifying the total bacteria has nucleotide sequences as shown in SEQ ID NO.9-10.

8. The kit according to claim 7, wherein the assay reagent further comprises a real-time quantitative PCR reagent.

9. The kit according to any of claims 2-8, wherein the kit further comprises an occult blood test reagent for detecting human hemoglobin in feces.

10. A use of a kit according to claim 9 in colorectal cancer early diagnosis, wherein colorectal cancer detection using the kit comprises the following steps: detecting an abundance and a fecal occult blood value of each component of a biomarker combination according to claim 1 in a sample, and then judging the detection result using a regression equation.

11. The use according to claim 10, wherein colorectal cancer detection using the kit comprises the following steps:

(1) determination of the fecal occult blood value: determining the occult blood result value X_0 of the fecal sample of a subject using the fecal occult blood test kit, where $X_0 = 1$ when the occult blood result is positive and $X_0 = 0$ when the occult blood result is negative;

(2) using genomic DNA from the feces of the subject as a template, detecting Ct_{marker}, an amplified value of each biomarker and $Ct_{total\ bacteria}$, an amplified value of the total bacteria with an assay reagent in the kit, separately;

(3) calculating a relative content (a Ct value) of each component of the biomarker combination in the total bacteria using the sample according to formula (I), separately,

$$Ct=lg(2^{\wedge}(Ct_{marker}-Ct_{total\ bacteria})) \quad (I);$$

(4) calculating a value Y according to a regression equation, and substituting the value Y into formula (II) to calculate a value P, where e is a natural constant,

$$P=\frac{e^{Y}}{1+e^{Y}} \quad (II);$$

(5) interpretation of result: when $P>0.5$, the diagnosis result of colorectal cancer is positive; and when $P\leq 0.5$, the diagnosis result of colorectal cancer is negative.

12. The use according to claim 11, wherein the regression equation in step (4) is shown as formula (III),

$$Y=A+\beta_0X_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4 \quad (III);$$

where, X_0 is the occult blood result value, X_1 is a Ct value of *Peptostreptococcus stomatis*, X_2 is a Ct value of *Fusobacterium nucleatum*, X_3 is a Ct value of *Parvimonas micra* and X_4 is a Ct value of *Bifidobacterium*; A and β_0-β_4 are constants, and A and β_0-β_4 are data obtained from clinical experiments.

13. The use according to claim 12, wherein the regression equation in step (4) comprises any of formula (IV) to formula (VIII):

$$Y=-3.9583+3.1015X_0-0.6478X_1-0.3980X_2+0.2912X_3-0.5130X_4$$

(IV);

$$Y=-2.965+2.7005X_0-1.2309X_1-0.6054X_2+0.3328X_3-0.2359X_4$$

(V);

$$Y=-3.099+1.9907X_0-2.0011X_1-0.3290X_2+0.5476X_3-0.6620X_4$$

(VI);

$$Y=-3.771+4.0089X_0-0.9983X_1-0.4482X_2+0.1288X_3-0.4917X_4$$

(VII);

$$Y=-2.9043+2.8920X_0-0.5471X_1-0.1049X_2+0.2281X_3-0.6194X_4$$

(VIII).