CLAIMS

1. A composition comprising or consisting of two or more of *Lactobacillus reuteri* MM2-3, *Lactobacillus plantarum* WCSF1, *Streptococcus thermophilus B of R* and *Escherichia coli* Nissle 1917, formulated to prevent or treat intestinal barrier dysfunction and/or heat stress in a subject.

2. The composition of claim 1, comprising or consisting of *Lactobacillus reuteri* MM2-3, *Lactobacillus plantarum* WCSF1, *Streptococcus thermophilus B of R* and *Escherichia coli* Nissle 1917.

3. The composition of claim 1 or 2, wherein the heat stress is at least in part due to physical exertion by the subject.

4. The composition of any one of claims 1 to 3, formulated to prevent or treat heat stress-induced gut permeability in said subject.

5. The composition of claim 4, comprising a dose of about 10^8 colony-forming units (CFU) of each strain.

6. The composition of any one of claims 1 to 5, wherein the subject is human.

7. The composition of any one of claims 1 to 7, wherein the composition is in the form of a gelatin capsule, pressed tablet, gel cap, liquid beverage or sachet.

~~8. A method of treatment or prophylaxis comprising administering to a subject in need of such treatment or prophylaxis an efficacious amount of a composition of any one of claims 1 to 7.~~

~~9. The method of claim 8, wherein the subject has, or will get, intestinal barrier dysfunction and/or heat stress.~~

~~10. The method of claim 8 or 9, wherein the subject is administered a composition comprising at least 10^8 to 10^{11} CFU per day.~~

~~11. The method of claim 10, wherein the subject is administered a composition comprising at least 10^8 CFU of each strain, preferably at least 5×10^9 CFU of each strain.~~

~~12. The method of any one of claims 8 to 11, wherein the composition ameliorates intestinal barrier dysfunction and/or lowers core body temperature and increases running performance.~~

~~13. The method of any one of claims 8 to 12, wherein the subject is human.~~

~~14~~8. A composition of any one of claims 1 to 7 for use in a method of treating or ameliorating conditions associated with intestinal barrier dysfunction and/or heat stress in a subject.

~~15~~9. Use of a composition of any one of claims 1 to 7 for the manufacture of a medicament for the treatment or prophylaxis of intestinal barrier dysfunction or heat stress in a subject.

~~16~~10. The use according to claim ~~15~~9, wherein the treatment is for heat stress-induced gut permeability.

~~17~~11. The use according to claim ~~15~~ 9 or ~~16~~10, wherein the medicament ameliorates intestinal barrier dysfunction or lowers core body temperature and increases running performance of the subject.

~~18~~12. The use according to any one of claims ~~15~~ 9 to ~~17~~11, wherein the medicament is for a human.

13. The use according to any one of claims 9 to 12, wherein the medicament is formulated for at least 10^8 to 10^{11} CFU per day to be administered.

14. The use according to claim 13, wherein the medicament is formulated for at least 10^8 CFU of each strain, preferably at least 5 x 10^9 CFU of each strain, to be administered.