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-induced gut permeability 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, comprising a dose of about 10^8 colony-forming units (CFU) of each strain.

4. The composition of any one of claims 1 to 3, wherein the subject is human.

5. The composition of any one of claims 1 to 4, wherein the composition is in the form of a gelatin capsule, pressed tablet, gel cap, liquid beverage or sachet.

6. A composition of any one of claims 1 to 5 for use in a method of treating or ameliorating conditions associated with intestinal barrier dysfunction and/or heat stress-induced gut permeability in a subject.

7. Use of a composition of any one of claims 1 to 5 for the manufacture of a medicament for the treatment or prophylaxis of intestinal barrier dysfunction or heat stress-induced gut permeability in a subject

8. The use according to claim 7 , wherein the medicament ameliorates intestinal barrier dysfunction or lowers core body temperature and increases running performance of the subject.

9. The use according to claim 7 or 8, wherein the medicament is for a human.

10. The use according to any one of claims 7 to 9, wherein the medicament is formulated for at least 10^8 to 10^{11} CFU per day to be administered.

11. The use according to claim 10, 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.