**We claim,**

1. A method of increasing the viable colony count of *Bacillus coagulans* MTCC 5856 said method comprising step of growing *Bacillus coagulans* MTCC 5856 in the presence of natural plant fibres selected from the group consisting of *Trigonella foenum-graecum* (fenugreek) seed fibers, *Lycium barbarum* seed fibers, *Linum usitatissimum* (Flax) seed fibers, *Cocos nucifera* (Coconut) fibers, *Zingiber officinale* (Ginger) rhizome fibers, *Emblica officinalis* (Amla) fruit fibers, *Plantago ovata* (Psyllium) fibers and *Vaccinium oxycoccos* (Cranberry) seed fibers.
2. A method of inhibiting pathogenic Gram Negative bacteria *E. Coli,* said method comprising step of bringing to contact *in vitro* said Gram Negative bacteria with *Bacillus coagulans* MTCC 5856 co-cultured with natural plant fibres selected from the group consisting of *Trigonella foenum-graecum* (fenugreek) seed fibers, *Lycium barbarum* seed fibers, *Linum usitatissimum* (Flax) seed fibers, *Cocos nucifera* (Coconut) fibers, *Zingiber officinale* (Ginger) rhizome fibers, *Emblica officinalis* (Amla) fruit fibers, *Plantago ovata* (Psyllium) fibers and *Vaccinium oxycoccos* (Cranberry) seed fibers.
3. The use of compound comprising *Bacillus coagulans* MTCC 5856 co-cultured with natural plant fibres selected from the group consisting of *Trigonella foenum-graecum* (fenugreek) seed fibers, *Lycium barbarum* seed fibers, *Linum usitatissimum* (Flax) seed fibers, *Cocos nucifera* (Coconut) fibers, *Zingiber officinale* (Ginger) rhizome fibers, *Emblica officinalis* (Amla) fruit fibers, *Plantago ovata* (Psyllium) fibers and *Vaccinium oxycoccos* (Cranberry) seed fibers for the manufacture of a medicament for inhibiting pathogenic Gram Negative bacteria *E. Coli*.

4. A method of producing short chain fatty acids by co-culturing *Bacillus coagulans* MTCC 5856 with natural plant fibres selected from the group consisting of *Trigonella foenum-graecum* (fenugreek) seed fibers, *Lycium barbarum* seed fibers, *Linum usitatissimum* (Flax) seed fibers, *Cocos nucifera* (Coconut) fibers, *Zingiber officinale* (Ginger) rhizome fibers, *Emblica officinalis* (Amla) fruit fibers, *Plantago ovata* (Psyllium) fibers and *Vaccinium oxycoccos* (Cranberry) seed fibers.
5. Compound comprising Bacillus coagulans MTCC 5856 with natural plant fibres selected from the group consisting of Trigonella foenum-graecum (fenugreek) seed fibers, Lycium barbarum seed fibers, Linum usitatissimum (Flax) seed fibers, Cocos nucifera (Coconut) fibers, Zingiber officinale (Ginger) rhizome fibers, Emblica officinalis (Amla) fruit fibers, Plantago ovata (Psyllium) fibers and Vaccinium oxycoccos (Cranberry) seed fibres for use in protection against diet-induced obesity and insulin resistance.
6. The use of compound comprising Bacillus coagulans MTCC 5856 with natural plant fibres selected from the group consisting of Trigonella foenum-graecum (fenugreek) seed fibers, Lycium barbarum seed fibers, Linum usitatissimum (Flax) seed fibers, Cocos nucifera (Coconut) fibers, Zingiber officinale (Ginger) rhizome fibers, Emblica officinalis (Amla) fruit fibers, Plantago ovata (Psyllium) fibers and Vaccinium oxycoccos (Cranberry) seed fibres in the manufacture of a medicament for protecting against diet-induced obesity and insulin resistance.