CLAIMS:

1. A host modifying (HM) CRISPR/Cas system, for use in treating or preventing in a human or animal subject, a condition or disease mediated by bacterial host cells, by altering the relative ratio of sub-populations of first and second bacteria in a mixed population of bacteria, the second bacteria comprising host cells, wherein the mixed population is comprised by the subject , the system comprising (a) host cells of the second bacterial population and (b) for each host cell of (a) at least one nucleic acid vector and components according to (i) to (ii):-
   (i) at least one nucleic acid sequence encoding a Cas nuclease;
   (ii) a host cell target sequence and an engineered host modifying (HM) CRISPR array comprising a spacer sequence (HM-spacer) and repeats encoding a HM-crRNA, the HM-crRNA comprising a sequence that is capable of hybridising to the host target sequence to guide said Cas to the target in the host cell to modify the target sequence;
   wherein said components (i) and (ii) of the system are split between the host cell and the at least one nucleic acid vector that can transform the host cell, wherein the at least one nucleic acid sequence encoding a Cas nuclease is endogenous to the host cell or is in the at least one vector, the host cell target sequence is in the host cell, and the engineered host modifying (HM) CRISPR array is in the at least one vector, whereby the HM-crRNA guides Cas to the target to modify the target sequence in the host cell, whereby the host cell is killed or host cell growth is reduced; and
   wherein the first sub-population consists of *E coli* cells; and
   wherein the second sub-population consists of a different bacterial species to that of the first sub-population.
2. A host modifying (HM) CRISPR/Cas system, for use in treating or preventing in a human or animal subject, a condition or disease mediated by bacterial host cells, by altering the relative ratio of sub-populations of first and second bacteria in a mixed population of bacteria, the second bacteria comprising host cells, wherein the mixed population is comprised by the subject, the system comprising (a) host cells of the second bacterial population and (b) for each host cell of (a) at least one nucleic acid vector and components according to (i) to (ii):-
   (i) at least one nucleic acid sequence encoding a Cas nuclease;
   (ii) a host cell target sequence and an engineered host modifying (HM) CRISPR array comprising a spacer sequence (HM-spacer) and repeats encoding a HM-crRNA, the HM-crRNA comprising a sequence that is capable of hybridising to the host target sequence to guide said Cas to the target in the host cell to modify the target sequence;

wherein said components (i) and (ii) are split between the host cell and the at least one nucleic acid vector that can transform the host cell, wherein the at least one nucleic acid sequence encoding a Cas nuclease is in the at least one vector, the host cell target sequence is in the host cell, and the engineered host modifying (HM) CRISPR array is in the at least one vector,
whereby the HM-crRNA guides Cas to the target to modify the target sequence in the host cell,
whereby the host cell is killed or host cell growth is reduced;
wherein the first sub-population consists of *E coli* cells; and
wherein the second sub-population consists of a different bacterial species to that of the first sub-population.

3. Use of a host modifying (HM) CRISPR/Cas system for altering the relative ratio of sub-populations of first and second bacteria in an *ex vivo* mixed population of bacteria, the second bacteria comprising host cells,
the system comprising (a) host cells of the second bacterial population and (b) for each host cell of (a) at least one nucleic acid vector and components according to (i) to (ii):-
(i) at least one nucleic acid sequence encoding a Cas nuclease;
(ii) a host cell target sequence and an engineered host modifying (HM) CRISPR array comprising a spacer sequence (HM-spacer) and repeats encoding a HM-crRNA, the HM-crRNA comprising a sequence that hybridises to the host cell target sequence to guide said Cas to the target in the host cell to modify the target sequence;
wherein said components (i) and (ii) are split between the host cell and the at least one nucleic acid vector that transforms the host cell, wherein the at least one nucleic acid sequence encoding a Cas nuclease is endogenous to the host cell or is in the at least one vector, the host cell target sequence is in the host cell, and the engineered host modifying (HM) CRISPR array is in the at least one vector, whereby the HM-crRNA guides Cas to the target to modify the target sequence in the host cell;
wherein the target sequence is modified by the Cas whereby the host cell is killed or host cell growth is reduced;
wherein the first sub-population consists of *E coli* cells; and
wherein the second sub-population consists of a different bacterial species to that of the first sub-population.

4. Use of a host modifying (HM) CRISPR/Cas system for altering the relative ratio of sub-populations of first and second bacteria in an *ex vivo* mixed population of bacteria, the second bacteria comprising host cells, the system comprising (a) host cells of the second bacterial

population and (b) for each host cell of (a) at least one nucleic acid vector and components according to (i) to (ii):-

(i) at least one nucleic acid sequence encoding a Cas nuclease;

(ii) a host cell target sequence and an engineered host modifying (HM) CRISPR array comprising a spacer sequence (HM-spacer) and repeats encoding a HM-crRNA, the HM-crRNA comprising a sequence that hybridises to the host cell target sequence to guide said Cas to the target in the host cell to modify the target sequence;

wherein said components (i) and (ii) are split between the host cell and the at least one nucleic acid vector that transforms the host cell, wherein the at least one nucleic acid sequence encoding a Cas nuclease is in the at least one vector, the host cell target sequence is in the host cell, and the engineered host modifying (HM) CRISPR array is in the at least one vector,

whereby the HM-crRNA guides Cas to the target to modify the target sequence in the host cell;

wherein the target sequence is modified by the Cas whereby the host cell is killed or host cell growth is reduced;

wherein the first sub-population consists of *E coli* cells; and

wherein the second sub-population consists of a different bacterial species to that of the first sub-population.

5. The use of claims 3 or 4 for treating an industrial or an *ex vivo* medical fluid, surface, apparatus or container; or for treating a waterway, water, a beverage, a foodstuff or a cosmetic, wherein the host cell(s) are comprised by or on the fluid, surface, apparatus, container, waterway, water, beverage, foodstuff or cosmetic.
6. The use of claims 3 or 4, wherein the mixed population is a gut microbiota population *ex vivo*; optionally wherein the host cells are *Firmicutes* or *Clostridium difficile* cells.
7. The use or system for use according to any preceding claim, wherein

(a) each host cell is of a strain or species found in human microbiota;

(b) each host cell is a *Staphylococcus, Streptococcus, Pseudomonas, Salmonella, Listeria, Desulfovibrio,* or *Clostridium* host cell;

(c) the first bacteria are probiotic, commensal or symbiotic with humans (eg, in the human gut); or

(d) the first bacteria are *Enterobacteriaceae* and the second bacteria are *Firmicutes*.

8. The use or system for use according to any preceding claim, wherein alternatively HM-crRNA and tracrRNA are comprised by a single guide RNA (gRNA).

9. The use or system for use according to any preceding claim, wherein host cell population growth is reduced by of at least 5-fold compared to the growth of a population of said host cells not transformed with said HM-array or a nucleotide sequence encoding said gRNA.
10. The use or system for use according to any preceding claim, wherein host cell population growth on a surface is inhibited.
11. The use or system for use according to any preceding claim, wherein each vector lacks a Cas nuclease encoding sequence.
12. The use or system for use or vector according to any preceding claim, wherein each vector is a phage vector.
13. The use or system for use according to any preceding claim, wherein for each host cell the system further comprises a tracrRNA sequence or a DNA sequence for expressing a tracrRNA sequence.
14. The system for use according to any one of claims 1, 2 and 7 to 13 when dependent on claim 1 or 2, wherein the mixed population is comprised by a gut microbiota of the subject.
15. The use or system for use according to claims 2, 4 and 7 to 14 when dependent on claim 2 or 4, wherein the at least one nucleic acid sequence encoding a Cas nuclease and the engineered host modifying (HM) CRISPR array are in different vectors.

16. An engineered nucleic acid vector for use in treating or preventing in a human or animal subject, a condition or disease mediated by pathogenic bacterial host cells, by altering the relative ratio of sub-populations of first and second bacteria in a mixed population of bacteria, the second bacteria comprising host cells, wherein the mixed population is comprised by the subject, wherein the first sub-population consists of *E coli* cells and the second sub-population consists of a different bacterial species to that of the first sub-population, , the vector comprising nucleic acid sequences for expressing a plurality of different crRNAs (eg, comprised by gRNAs) for use in a CRISPR/Cas system or use according to any preceding claim; and wherein a first of said crRNAs is capable of hybridising to a first nucleic acid sequence in said host cell; and a second of said crRNAs is capable of hybridising to a second nucleic acid sequence in said host cell, wherein said second sequence is different from said first sequence; and
    (a) the first sequence is comprised by an antibiotic resistance gene (or RNA thereof) and the second sequence is comprised by an antibiotic resistance gene (or RNA thereof); optionally wherein the genes are different;
    (b) the first sequence is comprised by an antibiotic resistance gene (or RNA thereof) and the second sequence is comprised by an essential or virulence gene (or RNA thereof);

(c) the first sequence is comprised by an essential gene (or RNA thereof) and the second sequence is comprised by an essential or virulence gene (or RNA thereof); or

(d) the first sequence is comprised by a virulence gene (or RNA thereof) and the second sequence is comprised by an essential or virulence gene (or RNA thereof).

17. A nucleic acid vector for use in treating or preventing in a human or animal subject, a condition or disease mediated by pathogenic bacterial host cells, by altering the relative ratio of sub-populations of first and second bacteria in a mixed population of bacteria, the second bacteria comprising host cells, wherein the mixed population is comprised by the subject, the first sub-population consists of *E coli* cells and the second sub-population consists of a different bacterial species to that of the first sub-population, wherein either i) the vector is for use in the use or system of claim 1 or 3 or any one of claims 5 to 16 when dependent on claim 1 or 3, the vector comprising more than 1.4kb of exogenous DNA sequence, wherein the exogenous DNA encodes one or more components of the CRISPR/Cas system and comprises the engineered array for expressing HM-crRNAs or gRNAs in host cells, wherein the exogenous sequence is devoid of a nucleotide sequence encoding a Cas nuclease that is cognate to the cRNA(s) or gRNA(s); wherein at least 2 different cRNAs or gRNAs are encoded by the exogenous DNA (eg, by at least 2 HM-CRISPR arrays) , or ii) wherein the vector is for use in a system according to claim 1 or 2 or any one of claims 7 to 16 when dependent on claim 1 or 2, wherein the vector comprises the engineered host modifying (HM) CRISPR array comprising a spacer sequence (HM-spacer) and repeats encoding a HM-crRNA, the HM-crRNA comprising a sequence that is capable of hybridising to the host target sequence to guide the Cas to the target in the host cells to modify the target sequence, wherein the vector is capable of being administered to the human or animal subject, and said HM-crRNA is expressed in the subject.

18. The nucleic acid vector according to claim 16 or 17, wherein the vector is devoid of a nucleotide sequence encoding a Cas nuclease that is cognate to the cRNA(s) or gRNA(s).

19. A host modifying CRISPR RNA (HM-crRNA) for use in treating or preventing in a human or animal subject, a condition or disease mediated by pathogenic bacterial host cells, by altering the relative ratio of sub-populations of first and second bacteria in a mixed population of bacteria, the second bacteria comprising host cells, wherein the mixed population is comprised by the subject, and wherein the first sub-population consists of *E coli* cells, wherein the HM-crRNA is encoded by an engineered host modifying (HM) CRISPR array as recited in claim 1 or 2 or any one of claims 7 to 16 when dependent on claim 1 or 2, wherein the vectors of the system as recited in claim 1 or 2 or any one of claims 7 to 16 when dependent on claim 1 or 2, are capable

of being administered to the human or animal subject, and said HM-crRNA is expressed in the subject.