CLAIMS:

1. ~~A nucleic acid vector for introduction into a host cell, the vector comprising a first nucleotide sequence encoding a Type I Cas3 and a second nucleotide sequence encoding one or more Cascade proteins, wherein the first and second sequences are under the control of one or more promoters comprised by the vector for expression of the proteins in the cell.~~A method for enhancing the yield of amplified copies of a first DNA construct in a population of *Escherichia coli (E. coli)* production strain cells,
wherein the first DNA construct comprises a nucleotide sequence encoding a Cas nuclease that is under the control of a promoter for controlling the expression of the Cas nuclease in the production strain cells,
wherein the promoter comprises a nucleotide sequence that is capable of binding to a repressor;
wherein the production strain cells comprises a nucleic acid sequence encoding the repressor,
wherein the nucleic acid sequence encoding the repressor is chromosomally-integrated sequence or comprised by a second DNA construct, and the amplified copies of the first DNA construct do no comprise the nucleic acid sequence encoding the repressor;
the method comprising culturing the cells to allow replication of the first DNA construct thereby amplifying the first DNA construct in the cells and to allow expression of the repressor in the cells,
wherein the promoter is repressed by the repressor in the production strain cells,
whereby the yield of amplified copies of the first DNA construct is enhanced relative to the yield produced using a constitutive promoter having an Anderson Score (AS) of AS ≥0.5 to control the expression of the Cas nuclease in the production strain cells,
wherein the production strain cell does not comprise a crRNA or gRNA operable with the Cas nuclease to target and cut a chromosomal sequence of the production strain cell.

2. The ~~vector~~ method of claim 1, wherein ~~the vector comprises an operon for expression in the cell of the Cas3 and Cascade proteins from a Cas module, the module comprising the nucleotide sequences encoding the Cas3 and Cascade proteins, and the operon comprising the Cas module under the control of a promoter for controlling the expression of both the Cas3 and Cascade proteins~~enhacing said yield by
   (a) reducing toxicity of the Cas in the production strain;
   (b) reducing mutation of the first DNA construct or production strain cell chromosomal DNA in the production strain;
   (c) promoting production cell viability during the amplification of the first DNA construct; and/or

(d) reducing the occurrence of Cas cutting of production strain cell chromosomal DNA or of the first DNA construct.

3. The ~~vector~~ method of claim ~~2~~1, wherein the promoter that is capable of binding to a repressor has a strength less than the Anderson Score promoter BBa_J23108.

~~(a) the first sequence is between the promoter and the second sequence in the operon;~~

~~(b) the operon comprises no Cas-encoding nucleotide sequences between the promoter and the first nucleotide sequence; and/or~~

~~(c) the operon comprises (in 5' to 3' direction) the promoter, the first sequence and the second sequence.~~

4. The ~~vector of any preceding~~ method of claim 1, wherein ~~first sequence is under the control of a promoter that has an Anderson Score (AS) of 0.5>AS >0.1~~the nucleotide sequence that is capable of binding to the repressor is a tetO of lacO.

5. The ~~vector~~ method of ~~any preceding~~ claim 4, wherein the ~~first sequence (and optionally the second sequence) is under the control of a promoter and translation initiation site (TIS) combination that is capable of producing expression of green fluorescent protein (GFP) from a first expression operating unit (EOU) in *E. coli* strain BW25113 cells with a fluorescence of from 0.5 to 4 times the fluorescence produced in *E. coli* strain BW25113 cells using a second EOU comprising a P10 promoter (SEQ ID NO: 1) combined with a BCD14 TIS (SEQ ID NO: 2), wherein the EOUs differ only in their promoter and TIS combinations, wherein each EOU comprises (in 5' to 3' direction) an upstream initiator, the respective promoter, the respective TIS, a nucleotide sequence encoding GFP, a 3' UTR, a transcription terminator and a downstream insulator~~promoter is $P_{LtetO-1}$,$P_{LlacO-1}$ or a repressible homologue thereof.

6. The ~~vector~~ method of ~~any preceding~~ claim 1, wherein the ~~vector is devoid of a Cas adaption module; and/or wherein the vector is devoid of nucleotide sequence encoding one, more or all of a Cas1, Cas2, Cas4, Cas6, Cas7 and Cas 8~~repressor is a tetraccline repressor (TetR) or a lac repressor (LacR).

7. The ~~vector~~ method of ~~any preceding~~ claim 1, wherein the ~~vector is a high copy number vector~~nuclease is Cas9.

8. The ~~vector~~ method of ~~any preceding~~ claim 1, wherein the nuclease is Cpf1.

~~(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas11, Cas7 and Cas8a1;~~

~~(b) the vector comprises nucleotide sequence encoding Cas3' and/or Cas3'';~~ ~~and~~

~~(c) the nucleotide sequences encoding the Cas3' and/or Cas3'' are between the promoter and the sequence(s) recited in (a); and~~

~~(d) optionally the host cell comprises an endogenous Type IB, C, U, D, E or F CRISPR/Cas system.~~

9. The ~~vector~~ method of ~~any one of claims 1 to 7~~claim 1, wherein the nuclease is Cas3and the first DNA construct or cell encode Cascade proteins that are cognate with the Cas3.

~~(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas8b1, Cas7 and Cas5; and~~

~~(b) the vector comprises a nucleotide sequence encoding Cas3 between the promoter and the sequence(s) recited in (a); and~~

~~(c) optionally the host cell comprises an endogenous Type IA, C, U, D, E or F CRISPR/Cas system.~~

10. The ~~vector~~ method of ~~any one of claims 1 to 7~~claim 1, wherein the first DNA construct comprises one or more nucleotide sequences for producing crRNAs or gRNAs that are operable for Cas nuclease targeting in target host cells.

~~(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas5, Cas8c and Cas7; and~~

~~(b) the vector comprises a nucleotide sequence encoding Cas3 between the promoter and the sequence(s) recited in (a); and~~

~~(c) optionally the host cell comprises an endogenous Type IA, B, U, D, E or F CRISPR/Cas system.~~

11. The ~~vector~~ method of ~~any one of claims 1 to 7~~claim 1, wherein the first DNA construct is comprised by a high copy number plasmid or phagemid.

~~(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas8U2, Cas7, Cas5 and Cas6; and~~

~~(b) the vector comprises a nucleotide sequence encoding Cas3 between the promoter and the sequence(s) recited in (a); and~~

~~(c) optionally the host cell comprises an endogenous Type IA, B, C, D, E or F CRISPR/Cas system.~~

12. ~~The vector~~ A method of ~~any one of claims 1 to 7, wherein~~ making phage particles or non-self replicative transduction particles comprising amplified compies of a first DNA construct, the mthod comprising:

(a) ~~the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas10d, Cas7 and Cas5~~culturing a population of *Escherichia coli (E. coli)* production strain cells, wherein the production strain cells comprise:

(i) the first DNA construct, wherein the first DNA construct comprises a nucleotide sequence encoding a Cas nuclease that is under the control of a promoter for controlling the expression of the Cas nuclease in the production strain cells, and wherein the promoter comprises a nucleotide sequence that is capable of binding to a repressor,

(ii) a nucleic acid sequence encoding the repressor, wherein the nucleic acid sequence encoding the repressor is chromosomally-integrated sequence or comprised by a second DNA construct, and

(iii) a nucleotide sequence that is inducible to produce phage coat proteins in the cells;

wherein the cultured production strain cells express the repressor in the cells and replicate the first DNA construct to produce the amplified copies of the first DNA construct, wherein the amplified copies of the first DNA construct do no comprise the nucleic acid sequence encoding the repressor; and

(b) ~~the vector comprises a nucleotide sequence encoding Cas3' and/or Cas3''; and~~ inducing production of the phage proteins and causing packaging of the amplified DNA into phage particles or non-self-replicative transduction particles, and further isolating the phage or transduction particles,

wherein the phage particles or non-self replicative transduction particles are devoid of the nucleic acid sequence encoding the repressor.

~~(c) the nucleotide sequences encoding the Cas3' and/or Cas3'' are between the promoter and the sequence(s) recited in (a); and~~

~~(d) optionally the host cell comprises an endogenous Type IA, B, C, U, E or F CRISPR/Cas system.~~

13. The ~~vector~~ method of ~~any one of claims 1 to 7~~claim 12, ~~wherein~~ further comprising formulating the particles into a pharmaceutical composition for administration to a human or animal subject for treating or reducing the risk of a disease or condition in the subject.

~~(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas8e, Cas11, Cas7, Cas5 and Cas6; and~~

~~(b) the vector comprises a nucleotide sequence encoding Cas3 between the promoter and the sequence(s) recited in (a); and~~

(c) optionally the host cell comprises an endogenous Type IA, B, C, D, U or F CRISPR/Cas system.

14. The vector method of any one of claims 1 to 7claim 13, wherein the particles are capable of infecting target host cells in the subject and transducing the cells with the first DNA construct, wherein the Cas nuclease encoded by the first DNA construct is expressed in the target host cells, wherein the Cas nuclease is operable with one or more crRNAs or gRNAs to modify a target sequence in the target host cells.

(a) the vector comprises (optionally in 5' to 3' direction) nucleotide sequence encoding one, more or all of Cas8f, Cas5, Cas7 and Cas6f;

(b) the vector comprises a nucleotide sequence encoding Cas3 between the promoter and the sequence(s) recited in (a); and

(c) the vector is devoid of nucleotide sequence encoding further Cas between the promoter and the sequence encoding the Cas3; and

(d) optionally the host cell comprises an endogenous Type IA, B, C, D, U or E CRISPR/Cas system.

15. The vector method of any one of claims 1 to 7claim 14, wherein the Cas and Cascade are nuclease cuts the target sequence thereby killing the target host cells and treating or reducing the risk of the disease or condition.

15.

(a) Type IB Cas and Cascade proteins; or

(b) Type IE Cas and Cascade proteins.

16. The vector method of any preceding claim 14, wherein the Cas3 is a Cas3 of a CRISPR/Cas locus of a first bacterial or archaeal species, wherein the distance between the Cas3-encoding sequence of the locus and its cognate promoter is further than the distance between the Cas3-encoding sequence and the respective promoter comprised by the vector; or the vector of any preceding claim, wherein the distance between the promoter and the Cas3-encoding sequence and/or Cascade protein-encoding sequence(s) is shorter than in a corresponding wild-type Type I locustarget host cells are bacterial cells selected from the group consisting of *C. difficile*, *P. aeruginosa*, *K. pneumonia*, *E. coli*, *H. pylori*, *S. pneumoniae* and *S. aureus* cells.

17. The vector method of any one of claims 1 to 7claim 13, wherein the Cas and Cascade are *E coli* Cas and Cascade proteins; or *Clostridium* (eg, *C difficile*) Cas and Cascade proteinsthe disease or condition is an *E. coli* infection.

18. The ~~vector~~ method of ~~any preceding~~ claim 12, wherein the ~~vector comprises (i) a CRISPR array for producing crRNAs in the host cell and/or (ii) one or more nucleotide sequences encoding one or more guide RNAs (gRNAs or single gRNAs), wherein the crRNAs or gRNAs are cognate to the Cas3 (and optionally cognate to the Cascade proteins)~~production strain cell does not comprise a crRNA or gRNA operable with the Cas nuclease to target and cut a chromosomal sequence of the production strain cell.

~~19. The vector of claim 18 when dependent from claim 2, wherein the array or gRNA-encoding sequence(s) are comprised by the operon and under the control of the promoter; or wherein the array or gRNA-encoding sequence(s) are under the control of a promoter that is different from the promoter that controls the expression of the Cas3.~~

~~20. A delivery vehicle comprising the vector of any preceding claim, wherein the delivery vehicle is capable of delivering the vector into the host cell; optionally wherein the delivery vehicle is a phage, non-replicative transduction particle, nanoparticle carrier, bacterium or liposome.~~

~~21. The vector or vehicle of any preceding claim, wherein the host cell is a bacterial or archaeal cell (optionally, the host cell is a *C difficile, P aeruginosa, K pneumoniae* (eg, carbapenem-resistant *Klebsiella pneumoniae* or Extended-Spectrum Beta-Lactamase (ESBL)-producing *K pneumoniae*), *E coli* (eg, ESBL-producing *E. coli*, or *E. coli* ST131-O25b:H4), *H pylori, S pneumoniae* or *S aureus* cell); or the cell is a eukaryotic cell (optionally a human cell, an animal cell, a plant cell or a yeast cell).~~

~~22. The vector or vehicle of any preceding claim for administration to a human or animal subject for treating or reducing the risk of a disease or condition in the subject; optionally wherein the disease or condition is an infection of the subject with host cells (eg, bacterial cells), or wherein the disease or condition is mediated by host cells (eg, bacterial cells).~~

~~23. A pharmaceutical composition comprising the vector or vehicle of any preceding claim and a pharmaceutically acceptable diluent, excipient or carrier.~~