The claims defining the invention are as follows:

1. A single Class 2 CRISPR polynucleotide comprising:
   a targeting region that comprises deoxyribonucleic acid (DNA) and an activating region adjacent to said targeting region, wherein said activating region comprises DNA and/or ribonucleic acid (RNA);
   wherein said activating region comprises a stem loop structure and is capable of binding with a Cpf1.

2. The single Class 2 CRISPR polynucleotide of claim 1, wherein the targeting region comprises a mixture of DNA and RNA.

3. The single Class 2 CRISPR polynucleotide of claim 1 or claim 2, wherein the activating region comprises a mixture of DNA and RNA.

4. The single Class 2 CRISPR polynucleotide of any one of claims 1 to 3, wherein the activating region comprises a compound selected from the group consisting of phosphorothioates, chiral phosphorothioates, phosphorodithioates, phosphotriesters, aminoalkylphosphotriesters, alkylphosphonates, 5'-alkylene phosphonates, chiral phosphonates, phosphinates, phosphoramidates, 3'-amino phosphoramidate, amino alkylphosphoramidates, phosphorodiamidates, thionophosphoramidates, thionoalkylphosphonates, thionoalkylphosphotriesters, selenophosphates, and boranophosphate.

5. A Class 2 CRISPR system comprising:
   (i) a single polynucleotide that comprises
   a targeting region that comprises deoxyribonucleic acid (DNA) and an activating region adjacent to said targeting region, wherein said activating region comprises DNA and/or ribonucleic acid (RNA); and
   (ii) a Cpf1.

6. The Class 2 CRISPR system of claim 5, wherein said targeting region comprises a mixture of DNA and RNA.

7. The Class 2 CRISPR system of claim 5 or claim 6, wherein said activating region comprises a mixture of DNA and RNA.

8. The Class 2 CRISPR system of any one of claims 5 to 7, further comprising a donor polynucleotide.

9. The Class 2 CRISPR system of any one of claims 5 to 8, wherein said activating region comprises a compound selected from the group consisting of phosphorothioates, chiral phosphorothioates, phosphorodithioates, phosphotriesters, aminoalkylphosphotriesters, alkylphosphonates, 5'-alkylene phosphonates, chiral phosphonates, phosphinates, phosphoramidates, 3'-amino phosphoramidate, amino alkylphosphoramidates, phosphorodiamidates, thionophosphoramidates, thionoalkylphosphonates, thionoalkylphosphotriesters, selenophosphates, and boranophosphates.

10. An *in vitro* method of modifying a target nucleic acid molecule comprising contacting the target nucleic acid molecule having a target sequence with:

(i) a single polynucleotide comprising (a) a targeting region that comprises deoxyribonucleic acid (DNA) and (b) an activating region adjacent to the targeting region, wherein said activating region comprises DNA and/or ribonucleic acid (RNA), wherein the targeting region is configured to hybridize with the target sequence, and wherein the activating region comprises a stem loop structure;

and

(ii) a Cpf1,

wherein the Cpf1 binds with the activating region of the single polynucleotide, wherein the contacting of the target nucleic acid molecule with the single polynucleotide and the Cpf1 occurs (A) *in vitro*, (B) in a non-human cell, or (C) in an isolated cell and wherein the target nucleic acid molecule is cleaved.

11. An *in vitro* method of modulating transcription of at least one gene within a target nucleic acid molecule comprising: contacting the target nucleic acid molecule having a target sequence with

(i) a single polynucleotide comprising (a) a targeting region that comprises deoxyribonucleic acid (DNA) and (b) an activating region adjacent to the targeting region, wherein said activating region comprises DNA and/or ribonucleic acid (RNA), wherein the targeting region is configured to hybridize with the target sequence, wherein the target sequence is within an open reading frame sequence of the at least one gene or is within a promoter sequence of the at least one gene, and wherein the activating region comprises a stem loop structure;

and

(ii) a Cpf1,

wherein the Cpf1 has no nuclease activity, wherein the Cpf1 binds with the activating region of the single polynucleotide, wherein the targeting region of the single polynucleotide hybridizes to the target sequence, wherein the contacting of the target nucleic acid molecule with the single polynucleotide and the Cpf1 occurs (A) *in vitro*, (B) in a non-human cell or (C) in an isolated cell and wherein the transcription of the at least one gene within the target nucleic acid molecule is modulated.

12. The method of claim 10 or claim 11, wherein said target nucleic acid molecule comprises:
    (a) DNA; or
    (b) RNA; or
    (c) a mixture of DNA and RNA.

13 The method of any one of claims 10 to 12, wherein said targeting region comprises a mixture of DNA and RNA, and/or said activating region comprises a mixture of DNA and RNA.

14. The method of any one of claims 10 to 13, wherein the contacting of the target nucleic acid molecule with the single polynucleotide and the Cpf1 occurs:
    (a) *in vitro*; or
    (b) in a non-human cell; or
    (c) in an isolated cell, optionally wherein the isolated cell is selected from the group consisting of: a bacterial cell, an archaeal cell, a plant cell, an algal cell, a fungal cell, an invertebrate cell, a vertebrate cell, a mammalian cell and a human cell.

15. The method of any one of claims 10 to 14, further comprising providing a donor polynucleotide.

16. The method of any one of claims 10 to 15, wherein the Cpf1 is encoded by an expression vector comprising a coding sequence for the Cpf1.

17. The method of any one of claims 10 to 16, wherein the single polynucleotide and Cpf1 form a complex prior to introduction into the cell.

18. The method of any one of claims 10 to 17, wherein the Cpf1 comprises a nuclear localization signal (NLS).

19. The method of any one of claims 10 to 18, wherein the single polynucleotide and Cpf1 are introduced into the cell by lipofection, electroporation, nucleofection, microinjection,

biolistics, liposomes, immunoliposomes, polycation, lipid:nucleic acid conjugates, or combinations thereof.

20. The method of any one of claims 10 to 19, wherein the activating region comprises a compound selected from the group consisting of phosphorothioates, chiral phosphorothioates, phosphorodithioates, phosphotriesters, aminoalkylphosphotriesters, alkylphosphonates, 5'-alkylene phosphonates, chiral phosphonates, phosphinates, phosphoramidates, 3'-amino phosphoramidate, amino alkylphosphoramidates, phosphorodiamidates, thionophosphoramidates, thionoalkylphosphonates, thionoalkylphosphotriesters, selenophosphates, and boranophosphates.