CLAIMS

1. A single guide ribonucleic acid (sgRNA) sequence comprising a truncated repeat:antirepeat region and a truncated Stem 2 region, in which the sgRNA sequence is an Nme1Cas9 single guide ribonucleic acid sequence or an Nme2Cas9 single guide ribonucleic acid sequence.

2. An sgRNA sequence according to Claim 1, further comprising a truncated spacer region.

3. An sgRNA sequence according to Claim 1, in which the sgRNA sequence length is selected from the group consisting of 121 nucleotides, 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.

4. A single guide ribonucleic acid (sgRNA) sequence comprising a truncated Stem 2 region, in which the sgRNA sequence is an Nme1Cas9 single guide ribonucleic acid sequence or an Nme2Cas9 single guide ribonucleic acid sequence.

5. An sgRNA sequence according to Claim 4, in which the sgRNA sequence length is selected from the group consisting of 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.

6. An adeno-associated viral (AAV) plasmid comprising a single guide ribonucleic acid-*Neisseria meningitidis* Cas9 nucleic acid vector.

7. An AAV plasmid according to Claim 6, in which the single guide ribonucleic acid-*Neisseria meningitidis* Cas9 nucleic acid vector comprises at least one promoter.

8. An AAV plasmid according to Claim 7, in which the at least one promoter is selected from the group consisting of a U6 promoter and a U1a promoter.

9. An AAV plasmid according to Claim 6, in which the single guide ribonucleic acid-*Neisseria meningitidis* Cas9 nucleic acid vector comprises a Kozak sequence.

10. An AAV plasmid according to Claim 6, in which the sgRNA comprises a nucleic acid sequence that is complementary to a gene-of-interest sequence.

11. An AAV plasmid according to Claim 10, in which the gene-of-interest sequence is selected from the group consisting of a *PCSK9* sequence and a *ROSA26* sequence.

12. An AAV plasmid according to Claim 6, in which the sgRNA comprises a truncated repeat-antirepeat sequence.

13. An AAV plasmid according to Claim 6, in which the sgRNA further comprises a truncated Stem 2 region.

14. An AAV plasmid according to Claim 13z, in which the sgRNA further comprises a truncated spacer region.

15. An AAV plasmid according to Claim 12, in which the sgRNA sequence has a length selected from the group consisting of 121 nucleotides, 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.

16. An AAV plasmid according to Claim 6, in which the sgRNA comprises a truncated Stem 2 region.

17. An AAV plasmid according to Claim 16, in which the sgRNA sequence has a length selected from the group consisting of 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.

CLAIMS

1. A single guide ribonucleic acid (sgRNA) sequence comprising a truncated repeat:antirepeat region and a truncated Stem 2 region, in which the sgRNA sequence is an Nme1Cas9 single guide ribonucleic acid sequence or an Nme2Cas9 single guide ribonucleic acid sequence.

2. An sgRNA sequence according to Claim 1, further comprising a truncated spacer region.

3. An sgRNA sequence according to Claim 1, in which the sgRNA sequence length is selected from the group consisting of 121 nucleotides, 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.

4. An adeno-associated viral (AAV) construct comprising a *Neisseria meningitidis* Cas9 single guide ribonucleic acid sequence (Nme sgRNA), the Nme sgRNA comprising a truncated repeat: antirepeat region and a truncated Stem 2 region, in which the Nme sgRNA sequence is an Nme1Cas9 single guide ribonucleic acid sequence or an Nme2Cas9 single guide ribonucleic acid sequence.

5. An AAV construct according to Claim 4, in which the AAV construct further comprises at least one promoter.

6. An AAV construct according to Claim 5, in which the at least one promoter is selected from the group consisting of a U6 promoter and a U1a promoter.

7. An AAV construct according to Claim 4, in which the Nme sgRNA further comprises a Kozak sequence.

8. An AAV construct according to Claim 4, in which the sgRNA further comprises a nucleic acid sequence that is complementary to a gene-of-interest sequence.

9. An AAV construct according to Claim 8, in which the gene-of-interest sequence is selected from the group consisting of a *PCSK9* sequence and a *ROSA26* sequence.

10. An AAV construct according to Claim 4, in which the Nme sgRNA further comprises a truncated spacer region.

11. An AAV construct according to Claim 4, in which the Nme sgRNA sequence has a length selected from the group consisting of 121 nucleotides, 111 nucleotides, 107 nucleotides, 105 nucleotides, 103 nucleotides, 102 nucleotides, 101 nucleotides, 100 nucleotides and 99 nucleotides.