WHAT IS CLAIMED IS:

1. A SpCas9 (*Streptococcus pyogenes* Cas9) variant or a nucleic acid encoding the same, the SpCas9 variant comprising an artificial manipulation of one or more amino acids selected from the group consisting of A203, N277, G366, F539, I601, M763, K890, D965, F1038, T1102 and D1127 in a wild-type SpCas9,

wherein the artificial manipulation is a deletion, or a substitution with one or more different amino acids,

wherein the SpCas9 variant has an improved target specificity.

2. The SpCas9 variant of claim 1,

wherein the different amino acid is an amino acid having a larger or smaller functional group in size than the selected one or more amino acid.

3. The SpCas9 variant of claim 1,

wherein the different amino acid is an amino acid having a higher or lower hydropathy index than the selected one or more amino acids.

4. The SpCas9 variant of claim 1,

wherein the SpCas9 variant comprises an artificial manipulation of F539/M763(F539 and M763), F539/K890 F539/F1038, I601/D965, M763/K890 M763/F1038, D965/F1038, F539/M763/F1038, F539/M763/K890/D965, F539/M763/K890/F1038 or A203/N277/G366/M763/F1038/T1102 in the wild-type SpCas9.

5. The SpCas9 variant of claim 1,

wherein the SpCas9 variant comprises an artificial manipulation of F539/M763/K890 in the wild-type SpCas9.

6. The SpCas9 variant of claim 5,

wherein the artificial manipulation of F539/M763/K890 is a substitution with serine, isoleucine and asparagine, respectively,

thereby the SpCas9 variant comprises serine at 539^{th} position, isoleucine at 763^{th} position and asparagine at 890^{th} position in an amino acid sequence of the SpCas9 variant.

7. The SpCas9 variant of claim 1,

wherein the SpCas9 variant further comprises an artificial manipulation of D10, H840 or both in the wild-type SpCas9.

8. The SpCas9 variant of claim 1,

wherein the SpCas9 variant further comprises one or more functional domains.

9. The SpCas9 variant of claim 8,

wherein the functional domain is one or more domains selected from the group consisting of a domain having methylase activity, demethylase activity, transcription activation activity, transcription repression activity, transcription release factor activity, histone modification activity, RNA cleavage activity or nucleic acid binding activity.

10. The SpCas9 variant of claim 8,

wherein the functional domain is a tag for isolation and purification of a reporter protein a NLS(nuclear localization sequence or signal), a NES(nuclear export sequence or signal), and a deaminase.

11. A complex for gene modification, comprising a Cas9 or a nucleic acid encoding the same, and a guide RNA or a nucleic acid encoding the same,

wherein the Cas9 is a *Streptococcus pyogenes* Cas9(SpCas9) variant,

wherein the SpCas9 variant comprises an artificial manipulation of one or more amino acids selected from the group consisting of A203, N277, G366, F539, I601, M763, K890, D965, F1038, T1102 and D1127 in a wild-type SpCas9,

wherein the artificial manipulation is a deletion, or a substitution with one or more different amino acids,

wherein the guide RNA comprises a guide sequence capable of forming a complementary bond with a target gene.

12. The complex of claim 11,

wherein the different amino acid is an amino acid having a larger or smaller functional group in size than the selected one or more amino acids.

13. The complex of claim 11,

wherein the different amino acid is an amino acid having a higher or lower hydropathy index than the selected one or more amino acids.

14. The complex of claim 11,

wherein the SpCas9 variant comprises an artificial manipulation of F539/M763 (F539 and M763), F539/K890, F539/F1038, I601/D965, M763/K890, M763/F1038, D965/F1038, F539/M763/F1038, F539/M763/K890/D965, F539/M763/K890/F1038 or A203/N277/G366/M763/F1038/T1102 in the wild-type SpCas9.

15. The complex of claim 11,

wherein the SpCas9 variant comprises an artificial manipulation of F539/M763/K890 in a the wild-type SpCas9.

16. The complex of claim 15,

wherein the artificial manipulation of F539/M763/K890 is a substitution with serine, isoleucine and asparagine, respectively,

thereby the SpCas9 variant comprises serine at 539^{th} position, isoleucine at 763^{th} position and asparagine at 890^{th} position in an amino acid sequence of the SpCas9 variant.

17. The complex of claim 11,

wherein the nucleic acid encoding the Cas9 and the nucleic acid encoding the guide RNA are included in one vector or each vector.

18. The complex of claim 17,

wherein the vector is a plasmid or a viral vector,

wherein the viral vector is one or more vectors selected from a retroviral vector, a lentiviral vector, an adenoviral vector, adeno-associated viral (AAV) vector, vaccinia viral vector, a poxviral vector and a herpes simplex viral vector.