WHAT IS CLAIMED:

1. A *Leishmania* cell genetically engineered such that the formation of an O-linked N-acetylglucosamine (GlcNAc) on a polypeptide in the *Leishmania* cell is reduced or eliminated,

wherein the formation of O-linked GlcNAc in the *Leishmania* cell prior to genetic engineering is catalyzed by at least one O-linked GlcNAc-transferase selected from the group consisting of OGNT1, OGNT2 and OGNTL, and homologous O-linked GlcNAc-transferases thereof, and

wherein the gene encoding the at least one O-linked GlcNAc-transferase is downregulated, functionally inactivated, deleted, or mutated.

2. The *Leishmania* cell of claim 1, wherein a gene encoding at least one O-linked GlcNAc-transferase of the *Leishmania* cell is functionally inactivated.

3. The *Leishmania* cell of claim 1, wherein a gene encoding at least one O-linked GlcNAc-transferase of the *Leishmania* cell is downregulated.

4. The *Leishmania* cell of claim 1, wherein a gene encoding at least one O-linked GlcNAc-transferase of the *Leishmania* cell is deleted or mutated.

5. The *Leishmania* cell of any one of claims 1 to 4, wherein the formation of the O-linked GlcNAc is reduced by at least 5%, at least 7%, at least 10%, at least 12%, at least 15%, at least 18%, at least 20%, at least 25%, at least 30%, at least 35%, at least 40%, at least 45%, at least 50%, at least 55%, at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, or 100% from the formation of the O-linked GlcNAc in a reference *Leishmania* cell.

6. The *Leishmania* cell of claim 5, wherein the reference *Leishmania* cell is a wild-type *Leishmania* cell.

7. The *Leishmania* cell of any one of claims 1 to 6, wherein the at least one O-linked GlcNAc-transferase is selected from the group consisting of OGNT1, OGNT2 and OGNTL.

8. The *Leishmania* cell of claim 1, wherein the at least one O-linked GlcNAc-transferase is a O-linked GlcNAc-transferase that is homologous to OGNT1, OGNT2 and/or OGNTL.

9. The *Leishmania* cell of any one of claims 1 to 8, wherein the number of the at least one O-linked GlcNAc-transferase is one, two or three.

10. The *Leishmania* cell of any one of claims 1 to 9, wherein the growth rate of the *Leishmania* cell is at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, or 100% of the growth rate of a reference *Leishmania* cell.

11. The *Leishmania* cell of claim 10, wherein the reference *Leishmania* cell is a wild-type *Leishmania* cell.

12. The *Leishmania* cell of any one of claims 1 to 11, wherein the *Leishmania* cell is *Leishmania tarentolae*.

13. The *Leishmania* cell of any one of claims 1 to 12, wherein the polypeptide is selected from the group consisting of adalimumab, rituximab and erythropoietin (EPO).

14. The *Leishmania* cell of any one of claims 1 to 13, wherein the *Leishmania* cell comprises a recombinant nucleic acid encoding a heterologous glycosyltransferase.

15. The *Leishmania* cell of claim 14, wherein the *Leishmania* cell comprises one or more heterologous glycosyltransferases.

16. The *Leishmania* cell of claim 14 or claim 15, wherein the heterologous glycosyltranferase is an N-acetyl glucosamine transferase; and/or a heterologous galactosyltransferase; and/or a heterologous sialyltransferase.

17. A method of making a polypeptide comprising (a) culturing the *Leishmania* cell of any one of claims 1 to 16 under suitable conditions for polypeptide production; and (b) isolating the polypeptide.