CLAIMS

1. A modified fusion protein comprising

(i) an L-asparaginase comprising the amino acid sequence of SEQ ID NO: 1, and

(ii) a polypeptide consisting solely of about 200-600 proline and alanine amino acid residues, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO: 7 or SEQ ID NO: 9.

2. The modified fusion protein according to claim 1, wherein the L-asparaginase consists of the amino acid sequence of SEQ ID NO: 1.

3. The modified fusion protein according to claim 1, wherein the modified protein is a fusion protein of the L-asparaginase and the polypeptide.

4. The modified fusion protein according to claim 3, wherein the polypeptide consists solely of 200 to 400 proline and alanine amino acid residues.

5. The modified fusion protein according to claim 3, wherein the polypeptide consists solely of 200 to 400 proline and alanine amino acid residues, and the proline amino acid residues constitute more than 10% and less than 70% of the polypeptide.

6. The modified fusion protein according to claim 3, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO: 7.

7. The modified fusion protein according to claim 3, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO: 9.

8. The modified fusion protein according to claim 3, wherein the fusion protein comprises the amino acid sequence of SEQ ID NO: 11.

9. The modified fusion protein according to claim 3, wherein the fusion protein comprises the amino acid sequence of SEQ ID NO: 13.

10. The modified fusion protein according to claim 3, wherein the L-asparaginase comprises the amino acid sequence of SEQ ID NO: 1 and the polypeptide consists of the amino acid sequence of SEQ ID NO: 7, or 9.

11. The modified fusion protein according to claim 2, wherein the polypeptide consists of the amino acid sequence of SEQ ID NO: 7.

12. The modified fusion protein according to claim 2, wherein the polypeptide consists of the amino acid sequence of SEQ ID NO: 9.

13. The modified fusion protein according to claim 3, wherein the L-asparaginase is composed of four subunits.

14. The modified fusion protein according to claim 3, wherein the fusion protein consists of the amino acid sequence of SEQ ID NO: 11 or 13.

15. A pharmaceutical composition comprising the modified fusion protein according to claim 1 and one or more pharmaceutical acceptable carriers or excipients.