CLAIMS

1. An expression vector for mammalian cells, comprising

(a) a selection cassette comprising a nucleotide sequence encoding a glutamine synthetase as a eukaryotic selection marker, operably linked to a 3-phosphoglycerate kinase (PGK) promoter and a polyadenylation (pA) signal;

(b) a selection cassette comprising a nucleotide sequence encoding an enzyme that confers resistance against an antibiotic to a bacterial host as a bacterial selection marker, operably linked to a suitable promoter;

(c) an expression cassette for a target polypeptide, comprising an insertion site for a nucleotide sequence encoding the target polypeptide, operably linked to a cytomegalovirus (CMV) promoter and a polyadenylation (pA) signal;

(d) a bacterial origin of replication; and

(e) an expression augmenting sequence element (EASE).

2. The expression vector of claim 1, further comprising a selection cassette comprising a nucleotide sequence encoding an enzyme that confers resistance against the antibiotic puromycin as a eukaryotic selection marker, operably linked to a 3-phosphoglycerate kinase (PGK) promoter and a polyadenylation (pA) signal.

3. The expression vector of claim 2, wherein the enzyme that confers resistance against the antibiotic puromycin is puromycin-N-acetyltransferase (pac).

4. The expression vector of any one of the preceding claims, wherein the antibiotic against which the bacterial selection marker confers resistance is Ampicillin, and wherein the enzyme that confers resistance against Ampicillin to a bacterial host is beta-lactamase.

5. The expression vector of any one of the preceding claims, wherein the bacterial origin of replication is the pUC origin of replication.

6. The expression vector of any one of the preceding claims, wherein the glutamine synthetase as a eukaryotic selection marker has a sequence of at least 90 % identity to the sequence of SEQ ID NO: 3 encoding a glutamine synthetase capable of catalyzing the ATP-dependent conversion of glutamate and ammonia to glutamine, or wherein the glutamine synthetase as a eukaryotic selection marker is a mammalian glutamine synthetase.

7. The expression vector of any one of the preceding claims, wherein the glutamine synthetase has an amino acid sequence of at least 96 % identity to the sequence of SEQ ID NO: 5 and is capable of catalyzing the ATP-dependent conversion of glutamate and ammonia to glutamine.

8. The expression vector of any one of the preceding claims, wherein the 3-phosphoglycerate kinase (PGK) promoter has a sequence of at least 98 % identity to the sequence of SEQ ID NO: 2 and is a functional promoter, and/or wherein the glutamine synthetase as a eukaryotic selection marker is a CHO glutamine synthetase having at least 97 % identity to the sequence of SEQ ID NO: 3 encoding a glutamine synthetase capable of catalyzing the ATP-dependent conversion of glutamate and ammonia to glutamine.

9. The expression vector of any one of the preceding claims, wherein the pA signal is the simian virus 40 pA signal.

10. The expression vector of any one of the preceding claims, being comprised in a recombinant CHO or NS0 host cell.

11. A method of producing a polypeptide, the method comprising culturing the recombinant CHO or NS0 host cell according to claim 10 under conditions suitable for expressing a heterologous target polypeptide, wherein the insertion site of the expression cassette for a target polypeptide comprises a nucleotide sequence encoding the polypeptide as a heterologous target polypeptide.

12. The method of claim 11, wherein the polypeptide comprises an antibody or a fragment thereof.

13. The use of an expression vector according to any one of claims 1 to 10 for expressing a polypeptide at high levels.

14. The use of claim 13, wherein the polypeptide comprises an antibody or a fragment thereof.