In one example the first and the second polyA signal sequence is selected independently of each other from the SV40 polyA signal sequence and the bovine growth hormone polyA signal sequence.

In one example the first and the second promoter are selected independently of each other from the human CMV promoter, the SV40 promoter, and the human elongation factor 1 alpha promoter.

In one example the nucleic acid encoding the antibody light chain and/or the nucleic acid encoding the antibody heavy chain comprises at least one intron.

In one example the nucleic acid encoding the antibody light chain and/or the nucleic acid encoding the antibody heavy chain is cDNA.

In one example the first expression cassette and the second expression cassette are arranged unidirectional.

In one example the expression plasmid further comprises a selection marker.

In one example the expression cassettes and the selection marker are arranged bidirectional.

There is provided the use of an expression plasmid as reported herein for the transient expression of an antibody or the stable expression of an antibody.

There is provided a eukaryotic cell comprising an expression plasmid as reported herein.

There is provided a method for the production of an antibody comprising the steps of

- cultivating a eukaryotic cell comprising an expression plasmid as reported herein or the cell as reported herein,
- recovering the antibody from the eukaryotic cell or the cultivation medium.

In one example the eukaryotic cell is a mammalian cell. In one example the mammalian cell is selected from CHO cell, HEK cell, BHK cell, NS0 cell, and SP2/0 cell.

There is provided an expression plasmid comprising in 5’ to 3’ direction a promoter sequence, a nucleic acid encoding an antibody heavy chain or an antibody light chain, an IRES element, a nucleic acid sequence encoding a

selection marker, and a polyA signal sequence, whereby the IRES element is the EMCV-IRES element.

In one example the nucleic acid encodes an antibody heavy chain.

In one example the selection marker is a fusion protein of the formula A-C-S, whereby A is a detectable polypeptide, C is a proteolytic signal sequence and S is a selectable marker.

In one example the proteolytic signal sequence is the PEST sequence of the ornithine decarboxylase.

In one example the detectable polypeptide is green fluorescent protein.

In one example the selectable marker is neomycin.

There is provided a nucleic acid encoding a polypeptide that comprises in N-terminal to C-terminal direction a green fluorescent protein, the PEST sequence of ornithine decarboxylase, and neomycin.

There is provided the use of a nucleic acid encoding a polypeptide that comprises in N-terminal to C-terminal direction a green fluorescent protein, the PEST sequence of ornithine decarboxylase, and neomycin for the selection of antibody secreting cells.

In another aspect, there is provided use of a vector comprising a first expression cassette consisting of in 5' to 3' direction a human CMV promoter, a nucleic acid encoding an antibody light chain and a polyA site and a second expression cassette consisting of in 5’ to 3’ direction a human CMV promoter sequence, a nucleic acid encoding an antibody heavy chain, an internal ribosomal entry site (IRES) element, a nucleic acid sequence encoding a selection marker, and a polyA signal sequence for the selection of antibody producing cells, whereby the IRES element is the EMCV-IRES element.

In one example the nucleic acid encodes an antibody heavy chain.

In one example the selection marker is a fusion protein of the formula A-C-S, whereby A is a detectable polypeptide, C is a proteolytic signal sequence and S is a selectable marker.

In one example the proteolytic signal sequence is the PEST sequence of the ornithine decarboxylase.

In one example the detectable polypeptide is green fluorescent protein.

In one example the selectable marker is neomycin.

There is provided a method for the selection of eukaryotic cell expressing an antibody comprising the following steps:

- cultivating a eukaryotic cell comprising i) an expression plasmid as disclosed herein and ii) a nucleic acid encoding the respective other antibody chain not encoded by the expression plasmid as disclosed herien,
- selecting a cell expressing the detectable polypeptide.

There is provided an expression plasmid comprising in 5' to 3' direction a promoter sequence, a nucleic acid encoding an antibody light chain, an IRES element, a nucleic acid sequence encoding an antibody heavy chain, and a polyA signal sequence, whereby the IRES element is the EV71-IRES element.

In one example the promoter sequence is selected from the human CMV promoter sequence with or without Intron A, the SV40 promoter sequence, and the human elongation factor 1 alpha promoter sequence with or without Intron A.

In one example the polyA signal sequence is selected from the bovine growth hormone polyA signal sequence and the SV40 polyA signal sequence.

In one example the plasmid comprises 3' to the polyA signal sequence the human gastrin terminator sequence.

There is provided use of an expression plasmid comprising in 5' to 3' direction a promoter sequence, a nucleic acid encoding an antibody light chain, an IRES element, a nucleic acid sequence encoding an antibody heavy chain, and a polyA signal sequence, for the expression of an antibody, whereby the IRES element is the EV71-IRES element.

In one example the promoter sequence is selected from the human CMV promoter sequence with or without Intron A, the SV40 promoter sequence, and the human elongation factor 1 alpha promoter sequence with or without Intron A.

In one example the polyA signal sequence is selected from the bovine growth hormone polyA signal sequence and the SV40 polyA signal sequence.

In one example the plasmid comprises 3' to the polyA signal sequence the human gastrin terminator sequence.

Patent Claims

1. Use of a vector comprising a first expression cassette consisting of in 5' to 3' direction a human CMV promoter, a nucleic acid encoding an antibody light chain and a polyA site and a second expression cassette consisting of in 5’ to 3’ direction a human CMV promoter sequence, a nucleic acid encoding an antibody heavy chain, an internal ribosomal entry site (IRES) element, a nucleic acid sequence encoding a selection marker, and a polyA signal sequence for the selection of antibody producing cells, whereby the IRES element is the EMCV-IRES element.