

CLAIMS

1 An immunocytokine for stimulating the activation and/or proliferation of IL-15Rbeta/gamma-positive cells, comprising a heterodimeric protein complex based on IL-15/IL-15R α comprising:

1) IL-15R α , which is linked to
a) an antibody light chain constant domain, or
b) antibody heavy chain constant domains comprising a first (CH1) heavy chain constant domain and an Fc fragment monomer comprising second (CH2) and third (CH3) heavy chain constant domains;

2) IL-15, which is linked to
a) antibody heavy chain constant domains comprising a first (CH1) heavy chain constant domain and an Fc fragment monomer comprising second (CH2) and third (CH3) heavy chain constant domains, or

b) an antibody light chain constant domain;
wherein the first antibody heavy chain constant domain and the antibody light chain constant domain within the heterodimeric complex have or do not have a covalent association through a natural S-S bridge, and

wherein, if the IL-15 or the IL-15R α is linked to the antibody light chain constant domain, then the other part of the heterodimeric protein complex selected from IL-15R α or IL-15 is linked to the antibody heavy chain constant domains.

2 The immunocytokine of Claim 1, wherein the antibody light chain constant domain is selected from CK or CL.

3 The immunocytokine of Claim 1, wherein the IL-15R α has the amino acid sequence represented by SEQ ID NO:9, or any known mutant IL-15R α variant with a similar biological activity.

4 The immunocytokine of Claim 1, wherein the IL-15 has the amino acid sequence represented by SEQ ID NO:10, or any known mutant IL-15 variant with a similar biological activity.

5 The immunocytokine of Claim 1, wherein the IL-15R α is linked to the antibody light chain constant domain.

6 The immunocytokine of Claim 5, wherein the IL-15R α linked to the antibody light chain constant domain has the amino acid sequence represented by SEQ ID NO:1 or SEQ ID NO:19.

7 The immunocytokine of Claim 1, wherein the IL-15 is linked to the antibody light chain constant domain.

8 The immunocytokine of Claim 7, wherein the IL-15 linked to the antibody light chain constant domain has the amino acid sequence represented by SEQ ID NO:3 or SEQ ID NO:21.