CLAIMS

1. A fusion protein comprising a cytokine antagonist and a targeting moiety consisting of an antibody or antibody-like molecule.
2. The fusion protein according to claim 1, wherein said cytokine antagonist is a mutant cytokine.
3. The fusion protein according to claim 1 or 2, wherein said targeting moiety is a nanobody.
4. The fusion protein according to any of the preceding claims, wherein said cytokine antagonist is an interferon antagonist.
5. The fusion protein according to claim 4, wherein said interferon antagonist is an IFNα2-R120E mutant.
6. The fusion protein according to any of the preceding claims, wherein said targeting moiety is specifically targeted to a marker of a cancer cell.
7. The fusion protein according to any of the claims 1-5, wherein said targeting moiety is specifically targeted to a marker of an immune cell.
8. A fusion protein according to any of the claims 1-6, for use in treatment of cancer.
9. A fusion protein according to any of the claims 1-5 and 7, for use in treatment of an autoimmune disease.
10. The fusion protein for use in treatment of cancer according to claim 8 wherein the targeting moiety is specifically targeted to a marker of a cancer cell.
11. The fusion protein for use in treatment of cancer according to claim 10, wherein the cytokine antagonist is an IFNα2-R120E mutant.
12. The fusion protein for use in treatment of an autoimmune disease according to claim 9, wherein the targeting moiety is specifically targeted to a marker of an immune cell.
13. The fusion protein for use in treatment of an autoimmune disease according to claim 12, wherein the cytokine antagonist is an IFNα2-R120E mutant.

CLAIMS

1. A composition comprising a fusion protein comprising an interferon antagonist and a targeting moiety, wherein:

the interferon antagonist is a human IFNα2 comprising a mutation at position R120; and

the targeting moiety consists of an antibody or an antibody-like molecule and allows for cell-specific targeting of the antagonistic activity.

2. The composition according to claim 1, wherein said targeting moiety comprises a variable domain of camelid heavy chain antibody (VHH) or a variable domain of new antigen receptor (VNAR).

3. The composition according to claim 1, wherein said interferon antagonist comprises a human IFNα2-R120E mutant.

4. The composition according to any of the preceding claims, wherein said targeting moiety is specifically targeted to a marker of a cancer cell.

5. The composition according to any of the preceding claims, wherein said targeting moiety is specifically targeted to a marker of an immune cell.

6. The composition according to claim 1, wherein said targeting moiety is specifically targeted to leptin receptor.

7. The composition according to claim 1, wherein said targeting moiety is specifically targeted to CD20.

8. The composition according to claim 1, wherein the human IFNα2 comprises a second mutation that decreases binding activity of the interferon antagonist.

9. The composition according to claim 8, wherein the second mutation is one of R149A and L153A.

10. A composition comprising a fusion protein comprising an interferon antagonist and a targeting moiety, wherein:

the interferon antagonist is human IFNα2 comprising R120E and L153A mutations, and

the targeting moiety comprises a variable domain of camelid heavy chain antibody (VHH) or a variable domain of new antigen receptor (VNAR) specifically targeted to CD20.

11. A composition of claim 1 for use in treating an autoimmune disease, wherein the composition is to be administered to a subject in need thereof.

12. A composition of claim 9 for use in treating an autoimmune disease, wherein composition is to be administered to a subject in need thereof.

13. Use of a composition of claim 1 in the manufacture of a medicament for treating an autoimmune disease.

14. Use of a composition of claim 9 in the manufacture of a medicament for treating an autoimmune disease.