Claims:

1. An isolated immunocytokine for activating the human IL-10Rα receptor, comprising a homodimeric complex based on IL-10 and human IgG1 Fc fragment, wherein the monomer based on IL-10 and human IgG1 Fc fragment comprises the amino acid sequence of SEQ ID NO:1.

2. An isolated nucleic acid, which encodes the immunocytokine as claimed in claim 1.

3. The isolated nucleic acid according to claim 2, wherein the nucleic acid is DNA.

4. The isolated nucleic acid according to claim 2, wherein the nucleic acid comprises a nucleotide sequence with SEQ ID NO:3.

5. The isolated nucleic acid according to claim 2, wherein the nucleic acid comprises a nucleotide sequence with SEQ ID NO:4.

6. An expression vector comprising the nucleic acid according to any of claims 2-5.

7. A method for producing a host cell for producing the immunocytokine according to claim 1, comprising transformation of the cell with the vector according to claim 6.

8. A host cell for producing the immunocytokine according to claim 1, comprising the nucleic acid according to any of claims 2-5.

9. A method for producing the immunocytokine according to claim 1, comprising culturing of the host cell according to claim 8 in a culture medium under conditions sufficient to produce said immunocytokine, if necessary, followed by isolation and purification of the resulting immunocytokine.

10. A pharmaceutical composition comprising the immunocytokine according to claim 1 and one or more pharmaceutically acceptable excipients.

11. A pharmaceutical composition according to claim 1, wherein said pharmaceutical composition is for activating the human IL-10Rα receptor.

12. The pharmaceutical composition according to claim 10 for treating an oncological disease.

13. The pharmaceutical composition according to claim ~~a~~12, wherein the oncological disease is selected from the group comprising: HNSCC (head and neck squamous cell carcinoma), cervical cancer, cancer of unknown primary, glioblastoma, esophageal cancer, bladder cancer, TNBC (triple-negative breast cancer), CRC (colorectal cancer), hepatocellular carcinoma, melanoma, NSCLC (non-small cell lung cancer), kidney cancer, ovarian cancer, colorectal cancer with microsatellite instability, leukemia (acute leukemia or myeloblastic leukemia), lymphoma, multiple myeloma, breast cancer, prostate cancer, bladder cancer, sarcoma, hepatocellular carcinoma, glioblastoma, Hodgkin's lymphoma, T- and B-cell acute lymphoblastic leukemia, small cell lung cancer, refractory non-Hodgkin's B-cell lymphoma, follicular lymphoma, marginal zone B-cell lymphoma, diffuse large B-cell lymphoma, pancreatic cancer, ovarian cancer, higher-risk myelodysplastic syndrome.

14. A pharmaceutical composition for activating the human IL-10Rα receptor, comprising the immunocytokine according to claim 1 and at least one other therapeutically active compound.

15. The pharmaceutical composition according to claim 14 for treating an oncological disease.

16. The pharmaceutical composition according to claim 15, wherein the oncological disease is selected from the group comprising: HNSCC (head and neck squamous cell carcinoma), cervical cancer, cancer of unknown primary, glioblastoma, esophageal cancer, bladder cancer, TNBC (triple-negative breast cancer), CRC (colorectal cancer), hepatocellular carcinoma, melanoma, NSCLC (non-small cell lung cancer), kidney cancer, ovarian cancer, colorectal cancer with microsatellite instability, leukemia (acute leukemia or myeloblastic leukemia), lymphoma, multiple myeloma, breast cancer, prostate cancer, bladder cancer, sarcoma, hepatocellular carcinoma, glioblastoma, Hodgkin's lymphoma, T- and B-cell acute lymphoblastic leukemia, small cell lung cancer, refractory non-Hodgkin's B-cell lymphoma, follicular lymphoma, marginal zone B-cell lymphoma, diffuse large B-cell lymphoma, pancreatic cancer, ovarian cancer, higher-risk myelodysplastic syndrome.

17. The pharmaceutical composition according to any of claims 14-15, wherein the other therapeutically active compound is an antibody, chemotherapeutic agent or hormone therapy agent.

18. The pharmaceutical composition according to any of claims 14-15, wherein the other therapeutically active compound is an immune checkpoint inhibitor.

19. The pharmaceutical composition according to claim 18, wherein the immune checkpoint inhibitor is selected from an antibody that specifically binds to PD-1, an antibody that specifically binds to PD-L1or an antibody that specifically binds to CTLA-4.

20. The pharmaceutical composition according to claim 19, wherein the antibody that specifically binds to PD-1 is selected from the group comprising: prolgolimab, pembrolizumab, nivolumab.

21. The pharmaceutical composition according to claim 19, wherein the antibody that specifically binds to CTLA-4 is ipilimumab.

22. The pharmaceutical composition ~~use~~ according to claim 19, wherein the antibody that specifically binds to PD-L1 and is selected from the group comprising: durvalumab, avelumab, atezolizumab, manelimab.

~~23. A method of treating an oncological disease, comprising administering to a subject the immunocytokine according to claim 1 or the pharmaceutical composition according to any of claims 10, 14, in need of such treatment, in a therapeutically effective amount.~~

~~24. The method for treating according to claim 23, wherein the oncological disease is selected from the group comprising: HNSCC (head and neck squamous cell carcinoma), cervical cancer, cancer of unknown primary, glioblastoma, esophageal cancer, bladder cancer, TNBC (triple-negative breast cancer), CRC (colorectal cancer), hepatocellular carcinoma, melanoma, NSCLC (non-small cell lung cancer), kidney cancer, ovarian cancer, colorectal cancer with microsatellite instability, leukemia (acute leukemia or myeloblastic leukemia), lymphoma, multiple myeloma, breast cancer, prostate cancer, bladder cancer, sarcoma, hepatocellular carcinoma, glioblastoma, Hodgkin's lymphoma, T- and B-cell acute lymphoblastic leukemia, small cell lung cancer, refractory non-Hodgkin's B-cell lymphoma, follicular lymphoma, marginal zone B-cell lymphoma, diffuse large B-cell lymphoma, pancreatic cancer, ovarian cancer, higher-risk myelodysplastic syndrome.~~

~~25. A method for activating the human IL-10Rα receptor in a subject in need of such activation,~~

~~comprising administering to a subject an effective amount of the immunocytokine according to claim 1 or the pharmaceutical composition as according to any of claims 10, 14.~~

~~26~~23. The use of the immunocytokine according to claim 1 or the pharmaceutical composition according to any of ~~Claims~~ claims 10, 14 for treating~~, in a subject in need of such treatment,~~ an oncological disease.

~~27~~24. The use according to claim ~~26~~23, wherein the oncological disease is selected from the group comprising: HNSCC (head and neck squamous cell carcinoma), cervical cancer, cancer of unknown primary, glioblastoma, esophageal cancer, bladder cancer, TNBC (triple-negative breast cancer), CRC (colorectal cancer), hepatocellular carcinoma, melanoma, NSCLC (non-small cell lung cancer), kidney cancer, ovarian cancer, colorectal cancer with microsatellite instability, leukemia (acute leukemia or myeloblastic leukemia), lymphoma, multiple myeloma, breast cancer, prostate cancer, bladder cancer, sarcoma, hepatocellular carcinoma, glioblastoma, Hodgkin's lymphoma, T- and B-cell acute lymphoblastic leukemia, small cell lung cancer, refractory non-Hodgkin's B-cell lymphoma, follicular lymphoma, marginal zone B-cell lymphoma, diffuse large B-cell lymphoma, pancreatic cancer, ovarian cancer, higher-risk myelodysplastic syndrome.

~~28~~25. The use of the immunocytokine according to claim 1 or at least one other therapeutically active compound for the treatment~~, in a subject in need of such treatment,~~ of an oncological disease.

~~29~~26. The use according to claim ~~28~~25, wherein the oncological disease is selected from the group comprising: HNSCC (head and neck squamous cell carcinoma), cervical cancer, cancer of unknown primary, glioblastoma, esophageal cancer, bladder cancer, TNBC (triple-negative breast cancer), CRC (colorectal cancer), hepatocellular carcinoma, melanoma, NSCLC (non-small cell lung cancer), kidney cancer, ovarian cancer, colorectal cancer with microsatellite instability, leukemia (acute leukemia or myeloblastic leukemia), lymphoma, multiple myeloma, breast cancer, prostate cancer, bladder cancer, sarcoma, hepatocellular carcinoma, glioblastoma, Hodgkin's lymphoma, T- and B-cell acute lymphoblastic leukemia, small cell lung cancer, refractory non-Hodgkin's B-cell lymphoma, follicular lymphoma, marginal zone B-cell lymphoma, diffuse large B-cell lymphoma, pancreatic cancer, ovarian cancer, higher-risk myelodysplastic syndrome.

~~30~~27. The use according to any of claims ~~28~~25-~~29~~26, wherein the other therapeutically active compound is an antibody, chemotherapeutic agent or hormone therapy agent.

~~31~~28. The use according to any of claims ~~28~~25-~~29~~26, wherein the other therapeutically active compound is an immune checkpoint inhibitor.

~~32~~29. The use according to claim ~~31~~28, wherein the immune checkpoint inhibitor is selected from an antibody that specifically binds to PD-1, an antibody that specifically binds to PD-L1 or an antibody that specifically binds to CTLA-4.

~~33~~30. The use according to claim ~~32~~29, wherein the antibody that specifically binds to PD-1 is selected from the group comprising: prolgolimab, pembrolizumab, nivolumab.

~~34~~31. The use according to claim ~~32~~29, wherein the antibody that specifically binds to CTLA-4 is ipilimumab.

~~35~~32. The use according to claim ~~32~~29, wherein the antibody that specifically binds to PD-L1 and is selected from the group comprising: durvalumab, avelumab, atezolizumab, manelimab.