Claims

1. Immune stimulant for non-invasive treatment of primary cancer and its metastases or for prevention of relapse of the cancer disease when used in association with radiofrequency waves using capacitive coupling in a condenser arrangement.

2. Immune stimulant according to claim 1, wherein the condenser arrangement comprises at least one electrode and at least one counter-electrode, wherein a patient is the dielectric material in between.

3. Immune stimulant according to claim 1 or 2, wherein no antenna like in the RF arrangement with radiative coupling is used for administering the radiofrequency waves.

4. Immune stimulant according to any one of the previous claims, wherein the radiofrequency waves are administered systemically.

5. Immune stimulant according to any one of the previous claims, wherein the administered radiofrequency waves do not increase the body temperature of the patient or the temperature of the treated area of the patient.

6. Immune stimulant according to any one of the previous claims, wherein the immune stimulant activates the immune system of the patient and in association with administered radiofrequency waves using capacitive coupling in a condenser arrangement provides a vaccine-effect against the cancer disease by developing memory cells to recognize and kill the cancer cells.

7. Immune stimulant according to any one of the previous claims, wherein the immune stimulant is selected from the group comprising lipopolysaccharides, extract of Bacillus Calmette-Guérin, Picibanil, Ancer, Xiao-Aiping, Leukine® (sargramostim; recombinant granulocyte macrophage colony-stimulating factor), killed *Corynebacterium parvum* bacteria and its extract, Ipilimumab (an antibody against cytotoxic T-lymphocyte-associated antigen 4), Levamisol, KLH (Keyhole Limpet Hemocyanin), low-dose cisplatin or carboplatin (< 0.4 mg/kg), Juzentaihoto (JT48) and deoxycholic acid (DCA).

8. Immune stimulant according to any one of the previous claims, wherein the metastases or the primary cancer is selected from the group consisting of: adenocarcinoma, choroidal melanoma, acute leukemia, acoustic neurinoma, ampullary carcinoma, anal carcinoma, astrocytoma, basal cell carcinoma, pancreatic cancer, desmoid tumor, bladder cancer, bronchial carcinoma, non-small cell lung cancer (NSCLC), breast cancer, Burkitt's lymphoma, corpus cancer, CUP-syndrome (carcinoma of unknown primary), colorectal cancer, small intestine cancer, small intestinal tumors, ovarian cancer, endometrial carcinoma, ependymoma, epithelial cancer types, Ewing's tumors, gastrointestinal tumors, gastric cancer, gallbladder cancer, gall bladder carcinomas, uterine cancer, cervical cancer, cervix, glioblastomas, gynecologic tumors, ear, nose and throat tumors, hematologic neoplasias, hairy cell leukemia, urethral cancer, skin cancer, skin testis cancer, brain tumors (gliomas), brain metastases, testicle cancer, hypophysis tumor, carcinoids, Kaposi's sarcoma, laryngeal cancer, germ cell tumor, bone cancer, colorectal carcinoma, head and neck tumors (tumors of the ear, nose and throat area), colon carcinoma, craniopharyngiomas, oral cancer (cancer in the mouth area and on lips), cancer of the central nervous system, liver cancer, liver metastases, leukemia, eyelid tumor, lung cancer, lymph node cancer (Hodgkin's/Non-Hodgkin's), lymphomas, stomach cancer, malignant melanoma, malignant neoplasia, malignant tumors gastrointestinal tract, breast carcinoma, rectal cancer, medulloblastomas, melanoma, meningiomas, Hodgkin's disease, mycosis fungoides, nasal cancer, neurinoma, neuroblastoma, kidney cancer, renal cell carcinomas, non-Hodgkin's lymphomas, oligodendroglioma, esophageal carcinoma, osteolytic carcinomas and osteoplastic carcinomas, osteosarcomas, ovarial carcinoma, pancreatic carcinoma, penile cancer, plasmocytoma, squamous cell carcinoma of the head and neck (SCCHN), prostate cancer, pharyngeal cancer, rectal carcinoma, retinoblastoma, vaginal cancer, thyroid carcinoma, Schneeberger disease, esophageal cancer, spinalioms, T-cell lymphoma (mycosis fungoides), thymoma, tube carcinoma, eye tumors, urethral cancer, urologic tumors, urothelial carcinoma, vulva cancer, wart appearance, soft tissue tumors, soft tissue sarcoma, Wilm's tumor, cervical carcinoma and tongue cancer. Particularly suitable for treatment are, for example, astrocytomas, glioblastomas, pancreatic cancer, bronchial cancer, breast cancer, colorectal cancer, ovarian cancer, gastric cancer, laryngeal

cancer, malignant melanoma, oesophageal cancer, cervical cancer, liver cancer, bladder cancer, and renal cell cancer.

9. Vaccine composed of at least one immune stimulant and radiofrequency waves using capacitive coupling in a condenser arrangement for treatment of primary cancer and its metastases or for prevention of relapse of a cancer disease.

10. Vaccine according to claim 9, wherein the immune stimulant is selected from the group comprising lipopolysaccharides, extract of Bacillus Calmette-Guérin, Picibanil, Ancer, Xiao-Aiping, Leukine® (sargramostim; recombinant granulocyte macrophage colony-stimulating factor), killed *Corynebacterium parvum* bacteria and its extract, Ipilimumab (an antibody against cytotoxic T-lymphocyte-associated antigen 4), Levamisol, KLH (Keyhole Limpet Hemocyanin), low-dose cisplatin or carboplatin (< 0.4 mg/kg), Juzentaihoto (JT48) and deoxycholic acid (DCA).

11. Vaccine according to claim 9 or 10, wherein the vaccine is used for *in-situ* vaccination.

12. Vaccine according to any one of claims 9 – 11, for vaccination of people with increased risk to develop cancer and/or for vaccination of a patient to prevent relapse of a successfully treated cancer disease.

13. Vaccine according to any one of claims 9 – 12, wherein the condenser arrangement comprises at least one electrode and at least one counter-electrode, wherein a patient is the dielectric material in between.

14. Vaccine according to any one of claims 9 – 13, wherein the administered radiofrequency waves do not increase the body temperature of the patient or the temperature of the treated area of the patient.

15. Vaccine according to any one of claims 9 – 14, wherein the metastases or the cancer is selected from the group consisting of: adenocarcinoma, choroidal melanoma, acute leukemia, acoustic neurinoma, ampullary carcinoma, anal carcinoma, astrocytoma, basal cell carcinoma, pancreatic cancer, desmoid tumor, bladder cancer, bronchial carcinoma, non-small cell lung cancer (NSCLC), breast cancer, Burkitt's lymphoma, corpus cancer,

CUP-syndrome (carcinoma of unknown primary), colorectal cancer, small intestine cancer, small intestinal tumors, ovarian cancer, endometrial carcinoma, ependymoma, epithelial cancer types, Ewing's tumors, gastrointestinal tumors, gastric cancer, gallbladder cancer, gall bladder carcinomas, uterine cancer, cervical cancer, cervix, glioblastomas, gynecologic tumors, ear, nose and throat tumors, hematologic neoplasias, hairy cell leukemia, urethral cancer, skin cancer, skin testis cancer, brain tumors (gliomas), brain metastases, testicle cancer, hypophysis tumor, carcinoids, Kaposi's sarcoma, laryngeal cancer, germ cell tumor, bone cancer, colorectal carcinoma, head and neck tumors (tumors of the ear, nose and throat area), colon carcinoma, craniopharyngiomas, oral cancer (cancer in the mouth area and on lips), cancer of the central nervous system, liver cancer, liver metastases, leukemia, eyelid tumor, lung cancer, lymph node cancer (Hodgkin's/Non-Hodgkin's), lymphomas, stomach cancer, malignant melanoma, malignant neoplasia, malignant tumors *gastrointestinal tract, breast carcinoma, rectal cancer, medulloblastomas*, melanoma, meningiomas, Hodgkin's disease, mycosis fungoides, nasal cancer, neurinoma, neuroblastoma, kidney cancer, renal cell carcinomas, non-Hodgkin's lymphomas, oligodendroglioma, esophageal carcinoma, osteolytic carcinomas and osteoplastic carcinomas, osteosarcomas, ovarial carcinoma, pancreatic carcinoma, penile cancer, plasmocytoma, squamous cell carcinoma of the head and neck (SCCHN), prostate cancer, pharyngeal cancer, rectal carcinoma, retinoblastoma, vaginal cancer, thyroid carcinoma, Schneeberger disease, esophageal cancer, spinalioms, T-cell lymphoma (mycosis fungoides), thymoma, tube carcinoma, eye tumors, urethral cancer, urologic tumors, urothelial carcinoma, vulva cancer, wart appearance, soft tissue tumors, soft tissue sarcoma, Wilm's tumor, cervical carcinoma and tongue cancer. Particularly suitable for treatment are, for example, astrocytomas, glioblastomas, pancreatic cancer, bronchial cancer, breast cancer, colorectal cancer, ovarian cancer, gastric cancer, laryngeal cancer, malignant melanoma, oesophageal cancer, cervical cancer, liver cancer, bladder cancer, and renal cell cancer.

Claims

1. Non-specific immune stimulant for use in non-invasive treatment of primary cancer and its metastases or for use in non-invasive prevention of relapse of the cancer disease or for use in non-invasive vaccination of people with increased risk to develop cancer, said non-specific immune stimulant being used in association with radiofrequency waves applied non-invasively using capacitive coupling in a condenser arrangement.

2. Non-specific immune stimulant for use according to claim 1, wherein the condenser arrangement comprises at least one electrode and at least one counter-electrode, wherein a patient is the dielectric material in between.

3. Non-specific immune stimulant for use according to claim 1 or 2, wherein no antenna like in the RF arrangement with radiative coupling is used for administering the radiofrequency waves.

4. Non-specific immune stimulant for use according to any one of the previous claims, wherein the radiofrequency waves applied non-invasively are administered systemically.

5. Non-specific immune stimulant for use according to any one of the previous claims, wherein the administered radiofrequency waves applied non-invasively do not increase the body temperature of the patient or the temperature of the treated area of the patient.

6. Non-specific immune stimulant for use according to any one of the previous claims, wherein the non-specific immune stimulant activates the immune system of the patient and in association with administered radiofrequency waves applied non-invasively using capacitive coupling in a condenser arrangement provides a vaccine-effect against the cancer disease by developing memory cells to recognize and kill the cancer cells

7. Non-specific immune stimulant for use according to any one of the previous claims, wherein the non-specific immune stimulant is selected from the group comprising lipopolysaccharides, extract of Bacillus Calmette-Guérin, Picibanil, Ancer, Xiao-Aiping, Leukine® (sargramostim; recombinant

granulocyte macrophage colony-stimulating factor), killed *Corynebacterium parvum* bacteria and its extract, Ipilimumab (an antibody against cytotoxic T-lymphocyte-associated antigen 4), Levamisol, KLH (Keyhole Limpet Hemocyanin), low-dose cisplatin or carboplatin (< 0.4 mg/kg), Juzentaihoto (JT48) and deoxycholic acid (DCA).

8. Non-specific immune stimulant for use according to any one of the previous claims, wherein the metastases or the primary cancer is selected from the group consisting of: adenocarcinoma, choroidal melanoma, acute leukemia, acoustic neurinoma, ampullary carcinoma, anal carcinoma, astrocytoma, basal cell carcinoma, pancreatic cancer, desmoid tumor, bladder cancer, bronchial carcinoma, non-small cell lung cancer (NSCLC), breast cancer, Burkitt's lymphoma, corpus cancer, CUP-syndrome (carcinoma of unknown primary), colorectal cancer, small intestine cancer, small intestinal tumors, ovarian cancer, endometrial carcinoma, ependymoma, epithelial cancer types, Ewing's tumors, gastrointestinal tumors, gastric cancer, gallbladder cancer, gall bladder carcinomas, uterine cancer, cervical cancer, cervix, *glioblastomas, gynecologic tumors, ear, nose and throat tumors*, hematologic neoplasias, hairy cell leukemia, urethral cancer, skin cancer, skin testis cancer, brain tumors (gliomas), brain metastases, testicle cancer, hypophysis tumor, carcinoids, Kaposi's sarcoma, laryngeal cancer, germ cell tumor, bone cancer, colorectal carcinoma, head and neck tumors (tumors of the ear, nose and throat area), colon carcinoma, craniopharyngiomas, oral cancer (cancer in the mouth area and on lips), cancer of the central nervous system, liver cancer, liver metastases, leukemia, eyelid tumor, lung cancer, lymph node cancer (Hodgkin's/Non-Hodgkin's), lymphomas, stomach cancer, malignant melanoma, malignant neoplasia, malignant tumors gastrointestinal tract, breast carcinoma, rectal cancer, medulloblastomas, melanoma, meningiomas, Hodgkin's disease, mycosis fungoides, nasal cancer, neurinoma, neuroblastoma, kidney cancer, renal cell carcinomas, non-Hodgkin's lymphomas, oligodendroglioma, esophageal carcinoma, osteolytic carcinomas and osteoplastic carcinomas, osteosarcomas, ovarial carcinoma, pancreatic carcinoma, penile cancer, plasmocytoma, squamous cell carcinoma of the head and neck (SCCHN), prostate cancer, pharyngeal cancer, rectal carcinoma, retinoblastoma, vaginal cancer, thyroid carcinoma, Schneeberger disease, esophageal cancer, spinalioms, T-cell lymphoma (mycosis fungoides), thymoma, tube carcinoma, eye tumors, urethral

cancer, urologic tumors, urothelial carcinoma, vulva cancer, wart appearance, soft tissue tumors, soft tissue sarcoma, Wilm's tumor, cervical carcinoma and tongue cancer. Particularly suitable for treatment are, for example, astrocytomas, glioblastomas, pancreatic cancer, bronchial cancer, breast cancer, colorectal cancer, ovarian cancer, gastric cancer, laryngeal cancer, malignant melanoma, oesophageal cancer, cervical cancer, liver cancer, bladder cancer, and renal cell cancer.