What is claimed is:

1. ~~A~~ Use of a recombinant TLR5 agonist ~~for use as~~in the manufacture of a medicament ~~in~~ for treating or preventing frailty in a patient, wherein

(a) a patient desiring or in need of frailty treatment or prevention is identified, wherein the frailty comprises an accumulation of age-related deficiencies in major physiological functions, as measured according to the Physiological Frailty Index, and

(b) said TLR5 agonist is a flagellin, or a derivative thereof, comprising an amino acid sequence having at least 95% sequence identity to SEQ ID NOs: 1-27, and the TLR5 agonist is not fused to a pathogenic protein antigen.

2. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1, wherein ~~frailty comprises an~~the accumulation of age-related deficiencies in major physiological functions comprises ~~,~~ reduction of regeneration capabilities, impaired wound healing, and/or increased risk of age-related diseases or disorders.

~~3. The recombinant TLR5 agonist for use as a medicament of either claim 1 or 2, wherein frailty is measured according to the Physiological Frailty Index.~~

34. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1~~3~~, wherein the Physiological Frailty Index comprises assessment of one or more parameters selected from grip strength, systolic blood pressure, diastolic blood pressure, blood flow volume, number of blood neutrophils, percentage of blood neutrophils, number of blood monocytes, percentage of blood monocytes, number of lymphocytes, number of red blood cells, hemoglobin levels, hematocrit levels, mean corpuscular volume, mean corpuscular hemoglobin levels, mean corpuscular hemoglobin concentration and keratinocyte-derived cytokine levels.

~~5. The recombinant TLR5 agonist for use as a medicament of any one of the above claims, wherein the TLR5 agonist is a flagellin or a derivative thereof.~~

46. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1~~5~~, wherein the TLR5 agonist comprises a polypeptide having an amino acid sequence ~~having at least 95% sequence identity to SEQ ID NO: 1, optionally wherein the TLR5 agonist comprises a polypeptide having an amino acid sequence~~ that is SEQ ID NO: 1.

57. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 15, wherein the TLR5 agonist comprises a polypeptide having an amino acid ~~sequence having at least 95% sequence identity to one of SEQ ID NOs: 2-27, optionally wherein the TLR5 agonist comprises a polypeptide having an amino acid sequence~~ of one of SEQ ID NOs: 2-27.

68. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of the above claims, wherein the patient's Physiological Frailty Index is reduced by ~~about~~ 25% to ~~about~~ 75%.

79. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 68, wherein the patient's Physiological Frailty Index is reduced by at least ~~about~~ 75%, or ~~about~~ 50%, or ~~about~~ 35%, or ~~about~~ 25%, optionally wherein the frailty is associated with aging.

810. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of the above claims, wherein the patient is middle-aged, optionally wherein the patient is between ~~about~~ 36 and ~~about~~ 55 years old.

911. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of the above claims, wherein the patient is elderly, optionally wherein the patient is between ~~about~~ 56 and ~~about~~ 85 years old.

1012. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of the above claims, wherein the biological sex of the patient is male or female.

1113. ~~A~~ Use of a recombinant TLR5 agonist in the manufacture of ~~for use as~~ a medicament ~~in~~ for treating or preventing an age-related disease or disorder in a patient, wherein

(a) a patient desiring or in need of treatment or prevention of an age-related disease or disorder is identified, wherein the age-related disease or disorder is accelerated aging, as measured according to the Physiological Frailty Index and

(b) said TLR5 agonist is a flagellin, or a derivative thereof, comprising an amino acid sequence having at least 95% sequence identity to SEQ ID NOs: 1-27, and the TLR5 agonist is not fused to a pathogenic protein antigen.

1214. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1113, wherein the age-related disease or disorder is characterized by increased cellular senescence.

~~15. The recombinant TLR5 agonist for use as a medicament of either claim 13 or 14, wherein the age-related disease or disorder is selected from accelerated aging, cardiovascular disease, cerebrovascular disease, peripheral vascular disease, cardiac diastolic dysfunction, benign prostatic hypertrophy, aortic aneurysm, emphysema, atherosclerosis, diabetes, pulmonary fibrosis, blindness, dementia, Alzheimer's disease, kidney dysfunction, osteoarthritis, low grade chronic sterile inflammation, herniated intervertebral disc, frailty, hair loss, hearing loss, vision loss, muscle fatigue, skin conditions, skin nevi, wrinkly skin, hyperpigmentation, scarring, keloid, rosacea, vitiligo, ichthyosis vulgaris, dermatomyositis, actinic keratosis, and sarcopenia.~~

~~16. The recombinant TLR5 agonist for use as a medicament of claim 15, wherein the age-related disease or disorder is accelerated aging.~~

13~~17~~. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 11~~16~~, wherein the accelerate aging is a ~~a~~ Progeroid syndrome, or symptom thereof.

14~~18~~. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 13~~17~~, wherein the Progeroid syndrome is selected from Hutchinson- Gilford progeria syndrome (HGPS), Werner syndrome (WS), Bloom syndrome (BS), Rothmund-Thomson syndrome (RTS), Cockayne syndrome (CS), xeroderma pigmentosum (XP), trichothiodystrophy (TTD), combined xeroderma pigmentosum-Cockayne syndrome (XP-CS), and restrictive dermopathy (RD).

15~~19~~. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 11~~16~~, wherein the accelerated aging is induced by a cancer or a cancer treatment.

16~~20~~. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 15~~19~~, wherein the cancer treatment is selected from one or more of radiotherapy, hormonal therapy, tyrosine kinase inhibitor, anthracycline, alkylating agent, topoisomerase inhibitor, antimetabolites/cytotoxic drug, BRAF inhibitor, antitumor antibiotic, isoquinololine alkaloid, Bcl-2 inhibitor, hematopoietic cell transplantation (HCT), telomerase inhibitor, nucleoside analogue reverse-transcriptase inhibitor, DNA cross-linking agent, ribonucleotide reductase inhibitor, microtubule inhibitor, and miRNA.

17~~21~~. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~19-20~~15-16, wherein the patient was previously afflicted with a cancer.

1822. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1721, wherein the patient is cancer survivor.

1923. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 1822, wherein the cancer survivor has completed a cancer treatment and has no apparent evidence of active disease.

2024. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~19-23~~15-19, wherein the cancer is selected from basal cell carcinoma, biliary tract cancer; bladder cancer; bone cancer; brain and central nervous system cancer; breast cancer; cancer of the peritoneum; cervical cancer; choriocarcinoma; colon and rectum cancer; connective tissue cancer; cancer of the digestive system; endometrial cancer; esophageal cancer; eye cancer; cancer of the head and neck; gastric cancer (including gastrointestinal cancer); glioblastoma; hepatic carcinoma; hepatoma; intra-epithelial neoplasm; kidney or renal cancer; larynx cancer; leukemia; liver cancer; lung cancer (e.g., small-cell lung cancer, non-small cell lung cancer, adenocarcinoma of the lung, and squamous carcinoma of the lung); melanoma; myeloma; neuroblastoma; oral cavity cancer (lip, tongue, mouth, and pharynx); ovarian cancer; pancreatic cancer; prostate cancer; retinoblastoma; rhabdomyosarcoma; rectal cancer; cancer of the respiratory system; salivary gland carcinoma; sarcoma; skin cancer; squamous cell cancer; stomach cancer; testicular cancer; thyroid cancer; uterine or endometrial cancer; cancer of the urinary system; vulval cancer; lymphoma including Hodgkin's and non-Hodgkin's lymphoma, as well as B-cell lymphoma (including low grade/follicular non-Hodgkin's lymphoma (NHL); small lymphocytic (SL) NHL; intermediate grade/follicular NHL; intermediate grade diffuse NHL; high grade immunoblastic NHL; high grade lymphoblastic NHL; high grade small non-cleaved cell NHL; bulky disease NHL; mantle cell lymphoma; AIDS-related lymphoma; and Waldenstrom's Macroglobulinemia; chronic lymphocytic leukemia (CLL); acute lymphoblastic leukemia (ALL); Hairy cell leukemia; chronic myeloblastic leukemia; as well as other carcinomas and sarcomas; ~~and post-transplant lymphoproliferative disorder (PTLD), as well as abnormal vascular proliferation associated with phakomatoses, edema (e.g. that associated with brain tumors),~~ and Meigs' syndrome.

2125. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~13-24~~11-20, wherein the patient is middle-aged, optionally wherein the patient is between ~~about~~ 36 and ~~about~~ 55 years old.

2226. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~13-24~~11-20, wherein the patient is elderly, optionally wherein the patient is between ~~about~~ 56 and ~~about~~ 85 years old.

2327. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~19-26~~15-22, wherein the patient received the cancer treatment before the age of ~~about~~ 18, before the age of ~~about~~ 16, before the age of ~~about~~ 14, before the age of ~~about~~ 12, before the age of ~~about~~ 10, before the age of ~~about~~ 8, before the age of ~~about~~ 6, before the age of ~~about~~ 4, or before the age of ~~about~~ 2.

2428. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~19-27~~15-23, wherein the TLR5 agonist is to be administered to the patient for at least one week, or at least one month, or at least six months, or at least one year, or at least two years, or at least three years, or at least four years, or at least five years after the patient received the cancer treatment.

2529. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~19-28~~15-24, wherein the patient no longer has cancer or the patient is in remission at the time the TLR5 agonist is to be administered.

2630. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~13-29~~11-25, wherein the administration of~~ering~~ the TLR5 agonist to the patient treats or prevents the age-related disease or disorder by decreasing cellular senescence.

~~31. The recombinant TLR5 agonist for use as a medicament of any one of claims 13-30, wherein the TLR5 agonist is flagellin or a derivative thereof.~~

2732. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 11~~31~~, wherein the TLR5 agonist comprises ~~a polypeptide having~~ an amino acid sequence ~~having at least 95% sequence identity to SEQ ID NO: 1, optionally wherein the TLR5 agonist comprises a polypeptide having an amino acid sequence~~ that is SEQ ID NO: 1.

2833. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 11~~31~~, wherein the TLR5 agonist comprises ~~a polypeptide having~~ an amino acid sequence ~~having at least 95% sequence identity to one of SEQ ID NOs: 2-27, optionally wherein the TLR5 agonist comprises a polypeptide having an amino acid sequence~~ of one of SEQ ID NOs: 2-27.

2934. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of claims ~~13-33~~11-28, wherein the biological sex of the patient is male or female.

3035. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of any one of the preceding claims, wherein the TLR5 agonist is to be administered in one or more cycles.

3136. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 3035, wherein the cycle involves dosing a patient once per day for one day, once a day for two days, once a day for three days, once a day for four days, or once a day for five days.

3237. The ~~recombinant TLR5 agonist for~~ use ~~as a medicament~~ of claim 3136, wherein no more than 5 cycles, or no more than 3 cycles, or no more than 2 cycles are to be administered per year.

3338. Use of a recombinant TLR5 agonist in the manufacture of a medicament for treating or preventing frailty and/or an age-related disease or disorder, wherein

(a) a patient desiring or in need of frailty treatment or prevention is identified, wherein the frailty and/or an age-related disease or disorder comprises an accumulation of age-related deficiencies in major physiological functions, as measured according to the Physiological Frailty Index, and

(b) said TLR5 agonist is a flagellin, or a derivative thereof, comprising an amino acid sequence having at least 95% sequence identity to SEQ ID NOs: 1-27, and the TLR5 agonist is not fused to a pathogenic protein antigen.