CLAIMS

What is claimed is:

1. A composition comprising a therapeutic agent, wherein the therapeutic agent is:

a) a C-terminal endostatin-derived peptide having the amino acid sequence of SEQ ID NO:24, 23, 14, 20, 19, 18, 16, 12 or 13, or a variant thereof, wherein the variant comprises at most 5 amino acid substitutions, and wherein:

SEQ ID NO: 24 is 16 amino acids in length,
SEQ ID NO: 23 is 16 amino acids in length,
SEQ ID NO: 14 is 20 amino acids in length,
SEQ ID NO: 20 is 17 amino acids in length,
SEQ ID NO: 19 is 18 amino acids in length,
SEQ ID NO: 18 is 19 amino acids in length,
SEQ ID NO: 16 is 20 amino acids in length,
SEQ ID NO: 12 is 23 amino acids in length, and
SEQ ID NO: 13 is 21 amino acids in length;

or wherein the therapeutic agent is:

b) an isolated nucleic acid encoding said C-terminal endostatin-derived peptide.

2. The composition of claim 1, wherein the C-terminal endostatin-derived peptide is a peptide that increases in abundance following pepsin digestion of SEQ ID NO:2 and that retains:

a) anti-fibrotic activity in an assay to measure a decrease in an extracellular matrix protein or an increase in a matrix metalloprotease;

b) anti-tumor activity in an assay to measure gene expression in human lung adenocarcinoma, A549 cells;

c) activity against acute lung injury in an assay to measure IL-6 in human lung

adenocarcinoma, A549 cells; or

d) a combination of said activities.

3. The composition of claim 1 or claim 2, wherein the C-terminal endostatin-derived peptide is a peptide having the length and amino acid sequence of SEQ ID NO:24, 23, 14, 20, 19, 18, 16, 12 or 13, which each include within their sequence the amino acid sequence LGGRL.

4. The composition of claim 3, wherein the C-terminal endostatin-derived peptide is 20 amino acids in length and has the amino acid sequence of SEQ ID NO:14, in which the C-terminal residues are LGGRL, or is 16 amino acids in length and has the amino acid sequence of SEQ ID NO:24, in which the N-terminal residues are LGGRL.

5. The composition of claim 3, wherein the C-terminal endostatin-derived peptide is 16, 17, 18, 19 or 20 amino acids in length and has the amino acid sequence of SEQ ID NO:24, SEQ ID NO:23, SEQ ID NO:20, SEQ ID NO:19, SEQ ID NO:18 or SEQ ID NO:16, respectively, and in which the C-terminal residues of each peptide are LGGRLLGQSAASCHHA (SEQ ID NO:24).

6. The composition of claim 3, wherein the therapeutic agent is a C-terminal endostatin-derived peptide having the amino acid sequence of SEQ ID NO:24 and being 16 amino acids in length, or having the amino acid sequence of SEQ ID NO:14 and being 20 amino acids in length.

7. The composition of any one of claims 1 to 6, wherein the C-terminal endostatin-derived peptide is biotinylated at the N-terminus, amidated at the C-terminus or a combination thereof.

8. The composition of any one of claims 1 to 7, for use in therapy.

9. Use of an effective amount of the composition of any one of claims 1 to 5 in the manufacture of a medicament for treating cancer in a subject in need thereof.

10. The use of claim 9, wherein the cancer is selected from the group consisting of a prostate cancer, lung cancer, breast cancer, liver cancer, ovarian cancer, endometrial cancer, bladder cancer, colon cancer, lymphoma, skin cancer, pancreatic cancer, gastric cancer, myeloma, and glioma.

11. The use of claim 9 or claim 10, wherein the medicament is to be used in combination with a second agent, wherein the second agent is an anti-cancer agent.

12. Use of an effective amount of the composition of any one of claims 1 to 7 in the manufacture of a medicament for treating fibrosis in a subject in need thereof.

13. The use of claim 12, wherein the fibrosis is selected from the group consisting of cardiac fibrosis, idiopathic pulmonary fibrosis, interstitial pulmonary fibrosis, familial pulmonary fibrosis, radiation- induced pulmonary fibrosis, Coal workers' pneumoconiosis, asbestosis, bleomycin lung, sarcoidosis, silicosis, acute lung injury, ARDS, hypertrophic scars, keloid scars, liver cirrhosis, systemic scleroderma, localized scleroderma, morphea, vascular fibrosis, kidney fibrosis, fibrosis as a result of Graft-Versus-Host Disease (GVHD), subepithelial fibrosis, endomyocardial fibrosis, uterine fibrosis, myelofibrosis, retroperitoneal fibrosis, nephrogenic systemic fibrosis, scarring after surgery, asthma, glomerulonephritis, multifocal fibrosclerosis, diabetic nephropathy, rheumatoid arthritis, atherosclerosis, radiation-induced fibrosis, chemo-therapy induced fibrosis, systemic sclerosis, hepatitis and Sjogren syndrome.

14. The use of claim 12 or claim 13, wherein the medicament is to be used in combination with a second agent, wherein the second agent is an anti-fibrotic agent.

15. Use of an effective amount of the composition of any one of claims 1 to 7 in the manufacture of a medicament for treating acute lung injury in a subject in need thereof.

16. The use of claim 15, wherein the acute lung injury is selected from the group consisting of acute respiratory distress syndrome (ARDS), virus-induced acute lung injury, SARS, COVID-19, influenza-induced acute lung injury, acute lung injury due to sepsis, acute lung injury due to pneumonia, acute lung injury due to aspiration, acute lung injury due to trauma, acute lung injury due to blood transfusion, acute lung injury due to smoke, acute lung injury due to toxic gas inhalation, acute lung injury due to pancreatitis, acute lung injury due to drug overdose, acute lung injury due to burn, and ventilator-associated lung injury, manifesting with inflammation.

17. The use of any one of claims 9 to 16, wherein the subject is a cat or dog, or a human subject.