can be used as active ingredients of an anticancer drug.

SUMMARY

[0007a] In one aspect, the present disclosure refers to a use of calcium lactate as an active ingredient in the manufacture of a medicament for treating cancer.

[0007b] In another aspect, the present disclosure refers to a use of a pharmaceutical composition comprising calcium lactate as an active ingredient in the manufacture of a medicament for treating cancer, wherein the pharmaceutical composition further comprises pharmaceutically acceptable carriers, excipients, or diluents.

[0008] The present disclosure has been made in an effort to provide a pharmaceutical composition for treating cancer including metal lactate salts as active ingredients.

[0009] Further, the present disclosure has been made in an effort to provide a pharmaceutical composition for suppressing metastasis of cancer including metal lactate salts as active ingredients.

[0010] Furthermore, the present disclosure has been made in an effort to provide a food composition for improving cancer including metal lactate salts as active ingredients.

[0011] Furthermore, the present disclosure has been made in an effort to provide a method for treating cancer comprising administering metal lactate salts.

[0012] Furthermore, the present disclosure has been made in an effort to provide a method for suppressing metastasis of cancer comprising administering metal lactate salts.

[0013] According to exemplary examples of the present disclosure, the metal lactate salts of the present disclosure have no side effects and disturb metabolism in a main energy production pathway to suppress the growth of cancer cells, induce apoptosis and also suppress expression of a factor that induces resistance to radiation, and, thus, can be widely used for more effective anticancer treatment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 shows a schematic diagram and a table comparing the structure and binding energy among calcium lactate, sodium lactate and potassium lactate, each having a molecular structure similar to that of calcium lactate.

[0015] FIG. 2 provides fluorescence microscope images showing the result of comparing the

WHAT IS CLAIMED IS:

1. Use of calcium lactate as an active ingredient in the manufacture of a medicament for treating cancer.

2. The use according to claim 1, wherein the calcium lactate is to be used in combination with radiation for treatment of cancer.

3. The use according to claim 2, wherein the radiation is to be irradiated to a cancer patient with an amount of radiation of 2 to 10 Gy per day and applied in combination with the calcium lactate.

4. The use according to claim 1, wherein the calcium lactate is to be used in combination with a known anticancer drug for treatment of cancer.

5. The use according to claim 4, wherein the anticancer drug includes one or more anticancer drugs selected from the group consisting of Imatinib, 5-FU (5-Florouracil), Irinotecan, Sunitinib, Oxaliplatin, Paclitaxel, Lapatinib, Trastuzumab (Herceptin), Gefitinib, Erlotinib, Methotrexate, Carboplatin, Docetaxel, Everolimus, Sorafenib, a carbonic anhydrase inhibitor, and a monocarboxylate transporter inhibitor.

6. The use according to any one of claims 1 to 5, wherein the cancer is selected from the group consisting of lung cancer, breast cancer, colorectal cancer, stomach cancer, brain cancer, pancreatic cancer, thyroid cancer, skin cancer, bone cancer, lymphoma, uterine cancer, cervical cancer, kidney cancer, and melanoma.

7. Use of a pharmaceutical composition comprising calcium lactate as an active ingredient in the manufacture of a medicament for treating cancer, wherein the pharmaceutical composition further comprises pharmaceutically acceptable carriers, excipients, or diluents.

8. The use according to claim 7, wherein the pharmaceutical composition is formulated into liquid, powder, aerosol, injection, fluid transfusion (intravenous drip), patch, capsule, pill, tablet, depot, or suppository.

9. The use according to claim 8, wherein the pharmaceutical composition is formulated into liquid.

10. The use according to claim 8, wherein the pharmaceutical composition is formulated for injection or for fluid transfusion (intravenous drip).

11. The use according to claim 8, wherein the pharmaceutical composition is formulated as a transdermal patch.

12. The use according to any one of claims 7 to 11, wherein the pharmaceutical composition additionally comprises an anticancer drug.

13. The use according to claim 9, wherein the anticancer drug includes one or more anticancer drugs selected from the group consisting of Imatinib, 5-FU (5-Florouracil), Irinotecan, Sunitinib, Oxaliplatin, Paclitaxel, Lapatinib, Trastuzumab (Herceptin), Gefitinib, Erlotinib, Methotrexate, Carboplatin, Docetaxel, Everolimus, Sorafenib, a carbonic anhydrase inhibitor, and a monocarboxylate transporter inhibitor.

14. The use according to any one of claims 1 to 13, wherein the use for treating cancer encompasses suppressing cancer metastasis.

15. The use according to claim 14, which suppresses the occurrence of one or more metastatic cancers selected from the group consisting of metastatic lung cancer, breast cancer, colorectal cancer, stomach cancer, brain cancer, pancreatic cancer, thyroid cancer, skin cancer, bone cancer, lymphoma, uterine cancer, cervical cancer, kidney cancer, and melanoma.