WHAT IS CLAIMED IS:

1. Use of a [^{225}Ac]-radioimmunoconjugate in the manufacture of a medicament for treating a patient having cancer, wherein the patient is being co-administered one or more checkpoint inhibitors:

wherein the [^{225}Ac]-radioimmunoconjugate comprises ^{225}Ac chelated with a compound having the formula: A-L^1-X-L^2-Z-B, wherein:

A is a chelating moiety selected from the group consisting of DOTA (1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid), DOTMA (1R,4R,7R,10R)-α, α', α", α'"-tetramethyl-1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid, DOTAM (1,4,7,10-tetrakis(carbamoylmethyl)-1,4,7,10-tetraazacyclododecane), DO3AM-acetic acid (2-(4,7,10-tris(2-amino-2-oxoethyl)-1,4,7,10-tetraazacyclododecan-1-yl)acetic acid), DOTP (1,4,7,10-tetraazacyclododecane-1,4,7,10-tetra(methylene phosphonic acid)), DOTA-4AMP (1,4,7,10-tetraazacyclododecane-1,4,7,10-tetrakis(acetamido-methylenephosphonic acid), NOTA (1,4,7-triazacyclononane-1,4,7-triacetic acid), and HP-DO3A (10-(2-hydroxypropyl)-1,4,7-tetraazacyclododecane-1,4,7-triacetic acid);

L^1 is a bond or optionally substituted C_{1-6} alkyl or C_{1-6} heteroalkyl;

X is –C(O)NR^1–*, –NR^1C(O)–*, –OC(O)NR^1–*, –NR^1C(O)O–*, –NR^1C(O)NR^1–, –CH_2–Ph–C(O)NR^1–*, –NR^1C(O)–Ph–CH_2–*, –O–, or –NR^1–, wherein "*" indicates the attachment point to L^2, and each R^1 is independently hydrogen or C_{1-6} alkyl;

L^2 is optionally substituted C_{1-50} alkyl or C_{1-50} heteroalkyl;

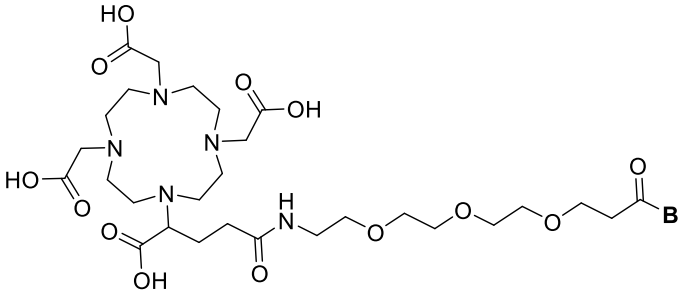
Z is –C(O)–, –CH_2–, –OC(O)–#, –C(O)O–#, –NR^2C(O)–#, –C(O)NR^2–#, or –NR^2–, wherein "#" indicates the attachment point to B, and each R^2 is independently hydrogen or C_{1-6} alkyl; and

B is a targeting moiety,

and wherein the [^{225}Ac]-radioimmunoconjugate is to be administered at a dose of 10 kBq to 400 kBq/kg of body weight of said patient or is to be administered as a unitary dosage of 1-30 MBq to said patient.

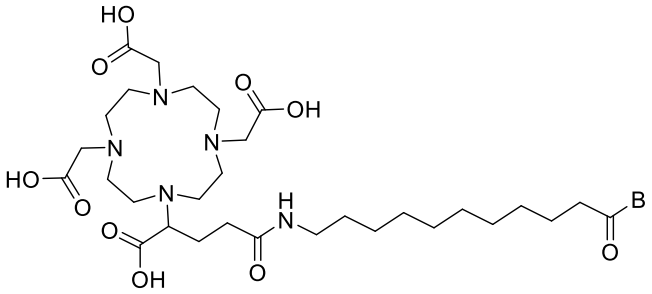
2. The use of claim 1, wherein the chelating moiety is DOTA.

3. The use of claim 1 or 2, wherein the compound is represented by formula I:



I.

4. The use of claim 1 or 2, wherein the compound is represented by formula II:



II.

5. The use of any one of claims 1-4, wherein the targeting moiety comprises an antibody or antigen-binding fragment thereof.

6. The use of claim 5, wherein B is an insulin-like growth factor 1 receptor (IGF-1R) antibody or antigen-binding fragment thereof, an endosialin (TEM-1) antibody or antigen-binding fragment thereof, or a fibroblast growth factor receptor 3 (FGFR3) antibody or antigen-binding fragment thereof.

7. The use of claim 6, wherein B is an IGF-1R antibody or antigen-binding fragment thereof selected from the group consisting of figitumumab, cixutumumab, TAB-199, AVE1642, BIIB002, robatumumab, and teprotumumab, and antigen-binding fragments thereof.

8. The use of any one of claims 1-7, wherein the [^{225}Ac]-radioimmunoconjugate is to be administered at a dose of about 10 kBq/kg to about 200 kBq/kg of body weight of said patient.

9. The use of any one of claims 1-8, wherein the [^{225}Ac]-radioimmunoconjugate is to be administered at a dose of about 30 kBq/kg to about 120 kBq/kg of body weight of said patient.

10. The use of any one of claims 1-9, wherein the one or more checkpoint inhibitors comprise a PD-1 inhibitor, a CTLA-4 inhibitor, or a combination thereof.

11. The use of any one of claims 1-10, wherein the one or more checkpoint inhibitors or the [^{225}Ac]-radioimmunoconjugate is to be administered in a lower effective dose.

12. The use of any one of claims 1-11, wherein the one or more checkpoint inhibitors comprise a PD-1 inhibitor to be administered at a dose of about 5 mg/kg to about 15 mg/kg.

13. The use of any one of claims 10-12, wherein the PD-1 inhibitor is pembrolizumab.

14. The use of any one of claims 1-13, wherein the one or more checkpoint inhibitors comprise both a PD-1 inhibitor and a CTLA-4 inhibitor, each to be administered at a dose of about 5 mg/kg to about 15 mg/kg.

15. The use of claim 7, wherein B is AVE1642 or an antigen-binding fragment thereof, and the one or more checkpoint inhibitors comprise a PD-1 inhibitor that is pembrolizumab.

16. The use of claim 15, wherein the [^{225}Ac]-radioimmunoconjugate is to be administered at a dose of about 30 kBq/kg to about 120 kBq/kg of body weight of said patient, and the PD-1 inhibitor is to be administered at a dose of about 5 mg/kg to about 15 mg/kg.

17. The use of any one of claims 1-16, wherein the patient has a cancer selected from the group consisting of breast cancer, non-small cell lung cancer, small cell lung cancer, pancreatic cancer, head and neck cancer, prostate cancer, colorectal cancer, cervical cancer, endometrial cancer, sarcoma, adrenocortical carcinoma, neuroendocrine cancer, Ewing’s Sarcoma, multiple myeloma, and acute myeloid leukemia.

18. The use of any one of claims 1-17, wherein the patient has a solid tumor expressing IGF-1R.

19. The use of any one of claims 1-18, wherein B is capable of binding to a tumor-associated antigen and said administration results in an increase in CD8+ T cells specific for the tumor-associated antigen.

20. The use of claim 19, wherein said administration results in at least 60% of the total CD8+ T cell population in a sample from the patient being specific for the tumor-associated antigen, and wherein the sample is a tumor sample.