Claims

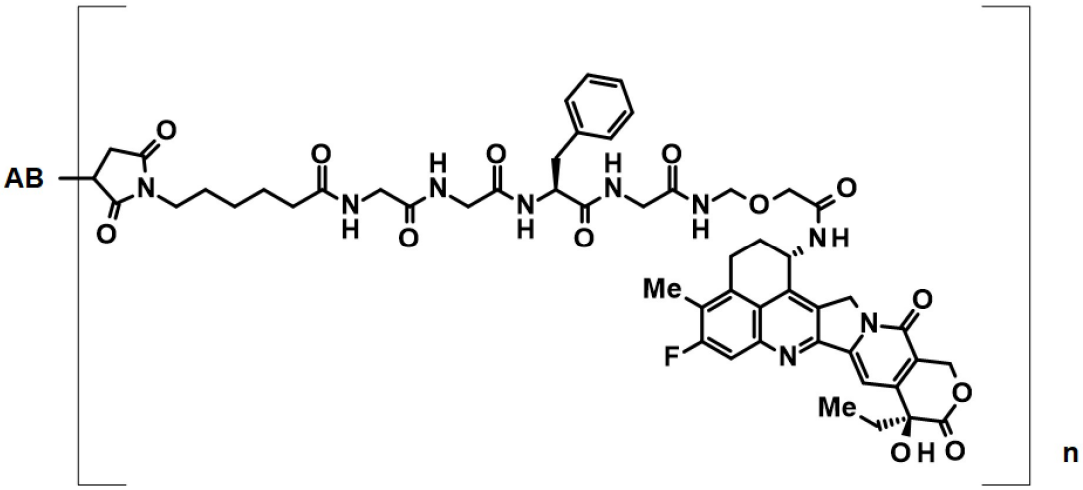
1. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating a cancer,

wherein the ADC comprises an antibody or a functional fragment of the antibody that specifically binds to the amino acid sequence of the EC3 domain of cadherin-6 shown in SEQ ID NO: 4;

wherein the cancer is (i) resistant to a platinum-based chemotherapy; (ii) resistant to a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane; (iii) a recurrence of a cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane; or (iv) a cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, a taxane, or both.

2. The use according to claim 1, wherein the antibody-drug conjugate (ADC) has the structure represented by the following formula:

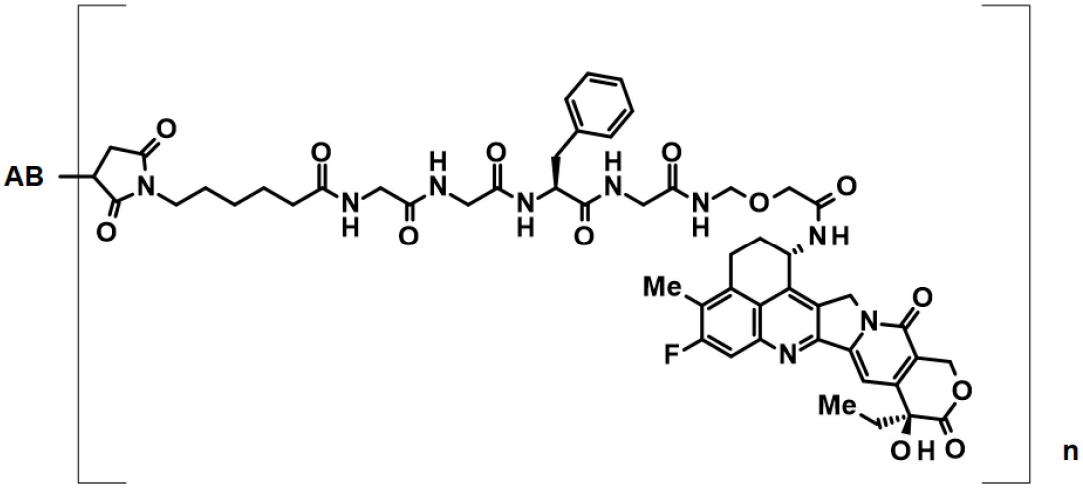
[Formula 4]



wherein AB represents the antibody or the functional fragment of the antibody, n represents the average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody.

3. The use according to claim 1, wherein the antibody-drug conjugate (ADC) has the structure represented by the following formula:

[Formula 4]



wherein AB represents the antibody, n represents the average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody.

4. The use according to any one of claims 1 to 3, wherein the cancer is selected from the group consisting of renal cell carcinoma, ovarian cancer, mesothelioma, thyroid cancer, uterine cancer, bile duct cancer, pancreatic cancer, non-small cell lung cancer, cervix cancer, brain tumor, head and neck cancer, sarcoma, osteosarcoma, small cell lung cancer, breast cancer, bladder cancer, endometrial cancer, and castration-resistant prostate cancer.

5. The use according to any one of claims 1 to 3, wherein the cancer is ovarian cancer.

6. The use according to claim 5, wherein the ovarian cancer is selected from the group consisting of epithelial ovarian cancer, fallopian tube cancer, or primary peritoneal cancer.

7. The use according to claim 5 or 6, wherein the ovarian cancer is metastatic.

8. The use according to any one of claims 1 to 7, wherein the antibody comprises CDRL1 consisting of the

amino acid sequence shown in SEQ ID NO: 12, CDRL2 consisting of the amino acid sequence shown in SEQ ID NO: 13, and CDRL3 consisting of the amino acid sequence shown in SEQ ID NO: 14, and CDRH1 consisting of the amino acid sequence shown in SEQ ID NO: 17, CDRH2 consisting of the amino acid sequence shown in SEQ ID NO: 60, and CDRH3 consisting of the amino acid sequence shown in SEQ ID NO: 19.

9. The use according to any one of claims 1 to 8, wherein the antibody comprises a light chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 63 and a heavy chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 71.

10. The use according to any one of claims 1 to 9, wherein the antibody comprises a light chain consisting of the amino acid sequence at positions 21 to 233 in SEQ ID NO: 61 and a heavy chain consisting of the amino acid sequence at positions 20 to 471 in SEQ ID NO: 69.

11. The use according to any one of claims 1 to 10, wherein the heavy chain or the light chain has undergone one or more modifications selected from the group consisting of N-linked glycosylation, O-linked glycosylation, N-terminal processing, C-terminal processing, deamidation, isomerization of aspartic acid, oxidation of methionine, addition of a methionine residue

to the N-terminus, amidation of a proline residue, conversion of N-terminal glutamine or N-terminal glutamic acid to pyroglutamic acid, and a deletion of one or two amino acids from the carboxyl terminus.

12. The use according to any one of claims 1 to 9, wherein the antibody is an antibody comprising a light chain consisting of the amino acid sequence at positions 21 to 233 in SEQ ID NO: 61 and a heavy chain consisting of the amino acid sequence at positions 20 to 470 in SEQ ID NO: 69.

13. The use according to any one of claims 1 to 12, wherein the average number of units of the selected drug-linker structure conjugated per antibody is in the range of from 7 to 8.

14. The use according to any one of claims 1 to 13, wherein the cancer comprises one or more tumors expressing CDH6.

15. The use according to any one of claims 1 to 14, wherein the antibody-drug conjugate (ADC) is to be administered in combination with one or more chemotherapeutics, wherein the antibody-drug conjugate (ADC) and the one or more chemotherapeutics are (i) separately comprised in different formulations to be administered at the same time or at different times; or

(ii) comprised together in a same formulation to be administered at the same time.

16. The use according to claim 15, wherein the one or more chemotherapeutics is or are an antimetabolite, a platinum-based drug, a taxane, or both a platinum-based drug and a taxane.

17. The use according to claim 15, wherein the one or more chemotherapeutics is or are gemcitabine, carboplatin, paclitaxel, or both carboplatin and paclitaxel.

18. The use according to any one of claims 1 to 17, wherein the subject has shown complete response (CR), partial response (PR), or stable disease (SD) on treatment with a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane.

19. The use according to any one of claims 1 to 18, wherein the cancer is resistant to a platinum-based chemotherapy.

20. The use according to any one of claims 1 to 19, wherein the cancer is resistant to a chemotherapy regimen comprising a platinum-based drug or a platinum-based drug in combination with a taxane.

21. The use according to any one of claims 1 to 20, wherein the cancer is a recurrence of a cancer previously treated with a chemotherapy regimen comprising a platinum-based drug or a platinum-based drug in combination with a taxane.

22. The use according to any one of claims 1 to 21, wherein the cancer is a cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, a taxane, or both.

23. The use according to any one of claims 1 to 22, wherein the cancer is a recurrence of the cancer that occurred prior to administration of the ADC.

24. The use according to claim 23, wherein the recurrence of the cancer occurs in less than or within about six months of completion of a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane.

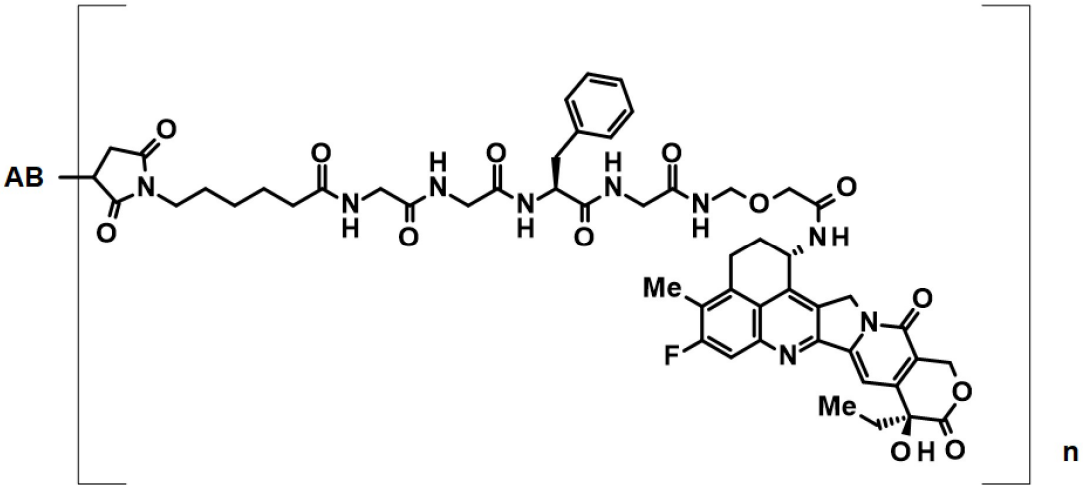
25. The use according to claim 23, wherein the recurrence of the cancer occurs in or after about six months of completion of a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane.

26. The use according to any one of claims 1 to 25, wherein the ADC is to be administered with a second

drug, wherein the ADC is to be administered prior to, after, or concurrently with the second drug.

27. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating an ovarian cancer resistant to platinum-based chemotherapy and/or a recurrence of an ovarian cancer, wherein the ADC has the structure represented by the following formula:

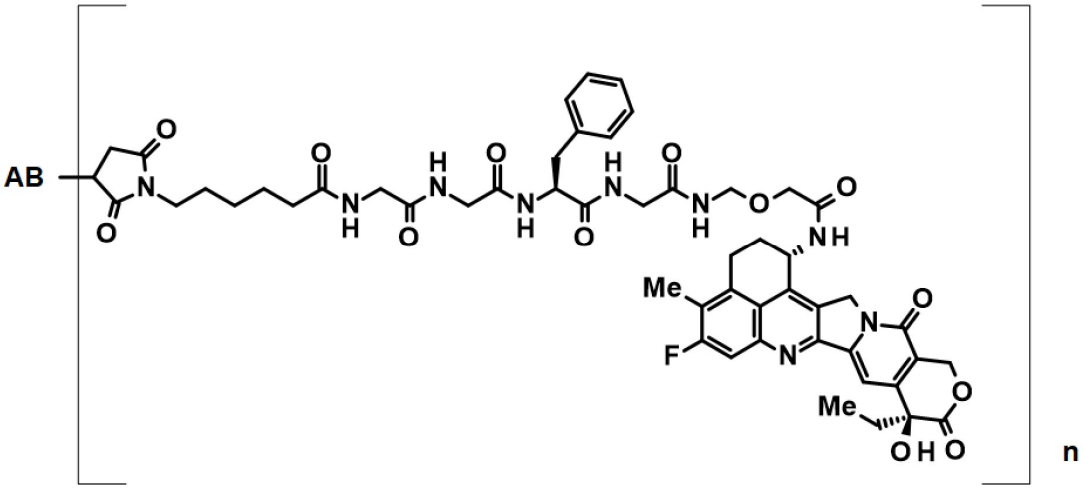
[25]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain amino acid sequence represented by SEQ ID NO: 87 or an amino acid sequence derived from the amino acid sequence represented by SEQ ID NO: 87 in which one or two amino acids are deleted from the carboxyl terminus thereof; and the light chain amino acid sequence represented by SEQ ID NO: 88.

28. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating an ovarian cancer that previously has been treated with a chemotherapy regimen comprising a platinum-based drug, a taxane, or both a platinum-based drug and a taxane, wherein the ADC has the structure represented by the following formula:

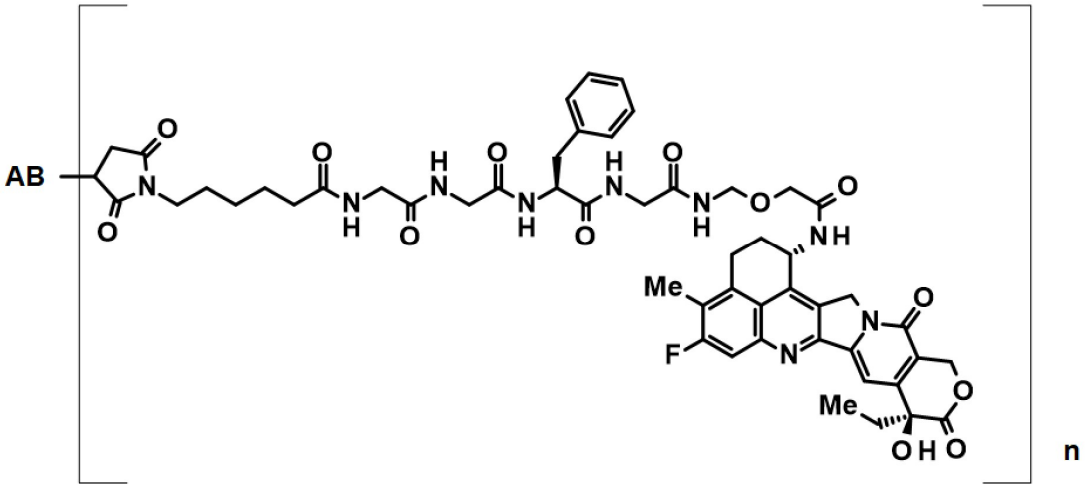
[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain amino acid sequence represented by SEQ ID NO: 87 or an amino acid sequence derived from the amino acid sequence represented by SEQ ID NO: 87 in which one or two amino acids are deleted from the carboxyl terminus thereof; and the light chain amino acid sequence represented by SEQ ID NO: 88.

29. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating an ovarian cancer resistant to platinum-based chemotherapy, wherein the ADC has the structure represented by the following formula:

[Formula 4]

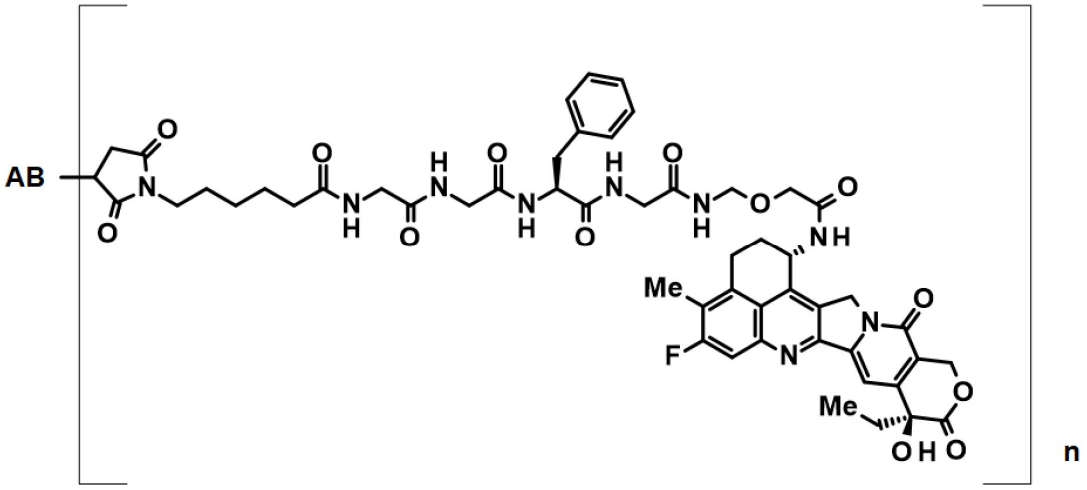


wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: a light chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 63 and a heavy chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 71.

30. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating an ovarian

cancer resistant to platinum-based chemotherapy, wherein the ADC has the structure represented by the following formula:

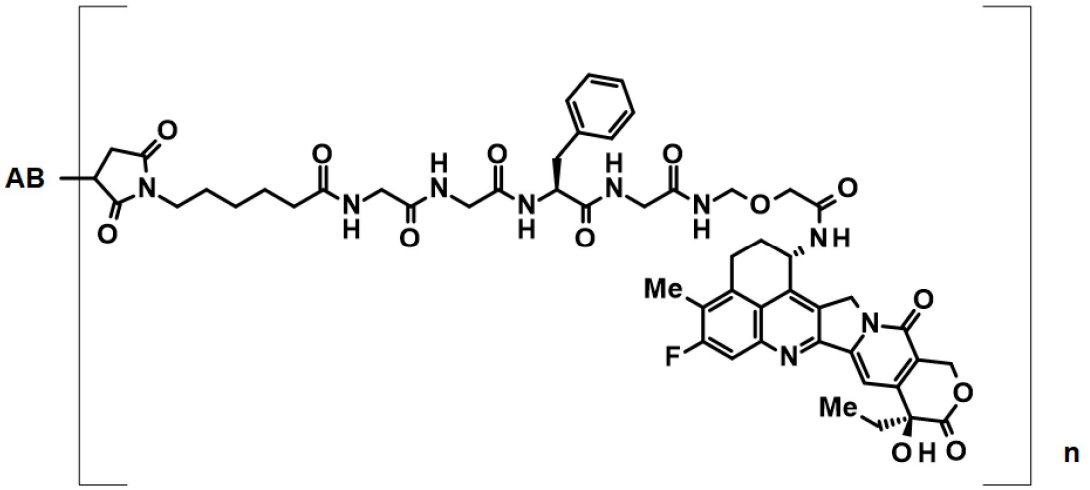
[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain amino acid sequence represented by SEQ ID NO: 87; and the light chain amino acid sequence represented by SEQ ID NO: 88.

31. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating a recurrence of an ovarian cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, wherein the ADC has the structure represented by the following formula:

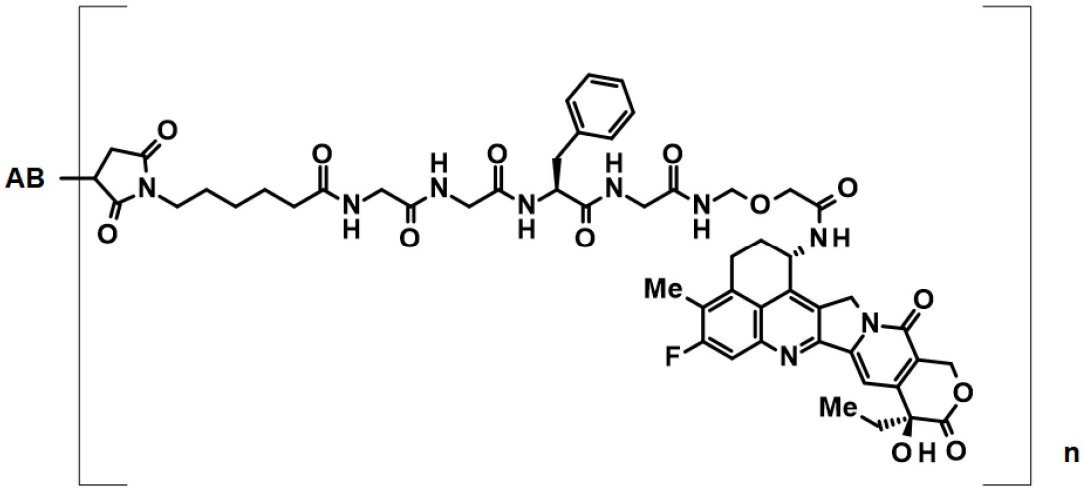
[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: a light chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 63 and a heavy chain variable region consisting of the amino acid sequence shown in SEQ ID NO: 71.

32. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating a recurrence of an ovarian cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, wherein the ADC has the structure represented by the following formula:

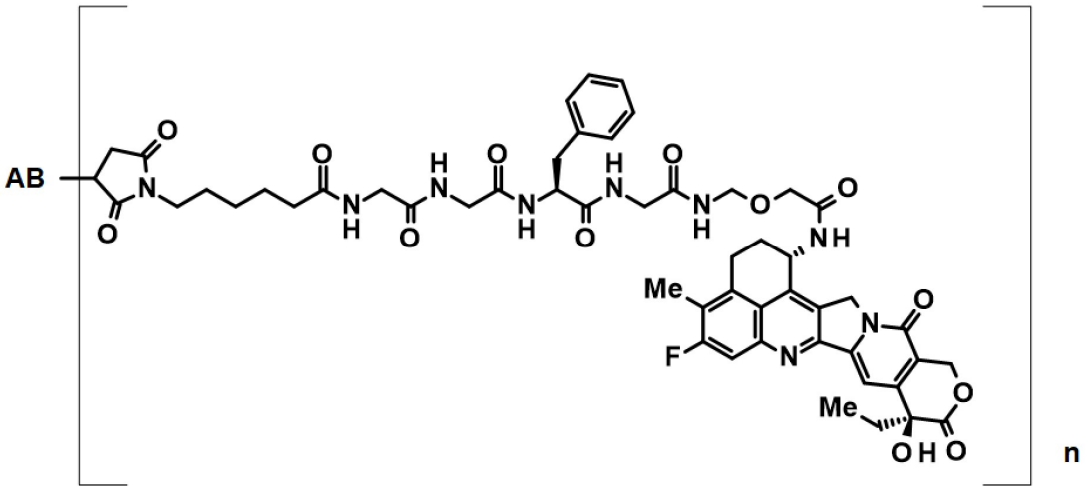
[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain amino acid sequence represented by SEQ ID NO: 87; and the light chain amino acid sequence represented by SEQ ID NO: 88.

33. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating an ovarian cancer resistant to platinum-based chemotherapy, wherein the ADC has the structure represented by the following formula:

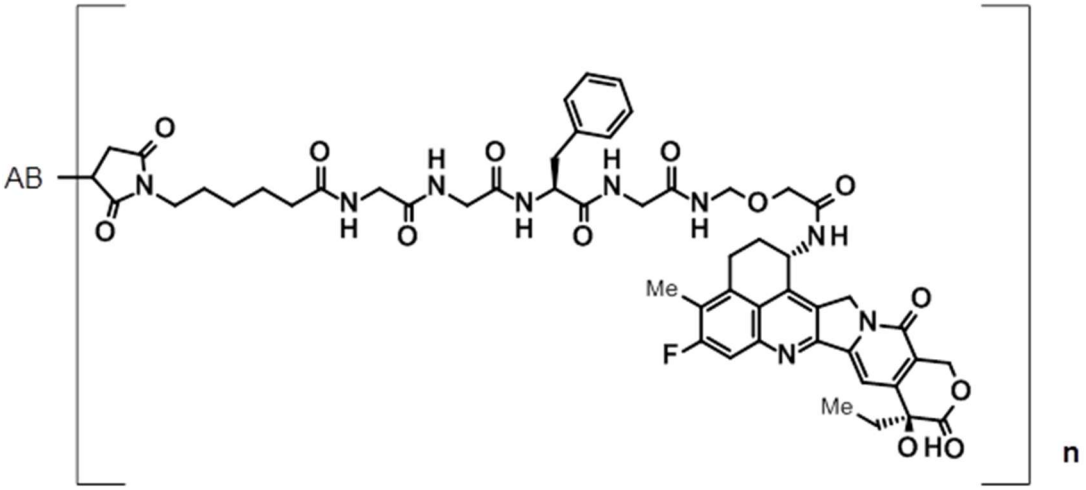
[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain of the amino acid sequence at 1 to 451 in SEQ ID NO: 87; and the light chain amino acid sequence represented by SEQ ID NO: 88.

34. Use of an antibody-drug conjugate (ADC) for the manufacture of a medicament for treating a recurrence of an ovarian cancer previously treated with a chemotherapy regimen comprising a platinum-based drug, wherein the ADC has the structure represented by the following formula:

[Formula 4]



wherein AB represents an antibody, n represents an average number of units of the drug-linker structure conjugated to the antibody per antibody, and the antibody is connected to the linker via a sulfhydryl group derived from the antibody; and wherein n is 7 to 8, wherein the antibody comprises: the heavy chain of amino acid sequence at 1 to 451 of SEQ ID NO: 87; and the light chain amino acid sequence represented by SEQ ID NO: 88.

35. The use according to any one of claims 1 to 34, wherein the cancer has acquired resistance to a chemotherapy regimen comprising a platinum-based drug, or a platinum-based drug in combination with a taxane.

36. The use according to any one of claims 1 to 35, wherein carboplatin is used as the platinum-based drug in the platinum-based chemotherapy or in the chemotherapy regimen comprising a platinum-based drug.

37. The use according to any one of claims 1 to 35 wherein the platinum-based drug is used in combination

with a taxane, and carboplatin is used as the platinum-based drug and paclitaxel is used as the taxane, in the platinum-based chemotherapy or in the chemotherapy regimen comprising a platinum-based drug.

38. The use according to any one of claims 27 to 37 wherein the ovarian cancer is epithelial ovarian cancer, fallopian tube cancer, or primary peritoneal cancer.