antigen, wherein the antigen is an extracellularly accessible cell-surface protein or glycoprotein preferentially displayed by abnormal cells in comparison to normal cells, wherein the cells are mammalian cells of a subject intended for therapy and wherein the antigen is capable of cellular internalization upon said selective binding;

$L_b$ is a ligand covalent binding moiety;

$Q^1$ is $A_a$-W, wherein A is an optional Stretcher Unit so that subscript a is 0 when A is absent or 1 when A is present and optionally comprises two, three, or four subunits;

$Q^2$ is W'-E-';

W and W' are Cleavable Units, wherein

W of $Q^1$ is comprises a peptide sequence selectively cleavable by a lysosomal protease in comparison to serum proteases;

W' of $Q^2$ is a carbohydrate moiety, wherein W'-E- of $Q^2$ provides a glycosidic bond to the carbohydrate moiety, wherein the glycosidic bond is cleavable by an intracellular glycosidase,

V, $Z^1$, $Z^2$, and $Z^3$ are each =CH-;

R', $R^8$, and $R^9$ are each hydrogen;

E is -O'-, wherein O' represents the oxygen atom of the glycosidic bond to the carbohydrate moiety;

J is -NH-;

$D^+$ represents the structure of a quaternized tertiary amine-containing drug, wherein the tertiary amine-containing drug is covalently bonded to the -C($R^8$)($R^9$)- moiety through the quaternized tertiary amine,

wherein the tertiary amine-containing drug (D) is a tertiary amine-containing tubulin disrupting agent; and

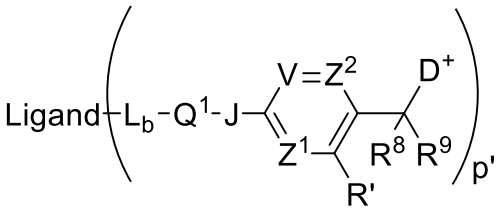
subscript p' is an integer ranging from 1 to 20; and

wherein said selective cleavage by the lysosomal protease or cleavage by the glycosidase initiates release of D from the Ligand Drug Conjugate compound.

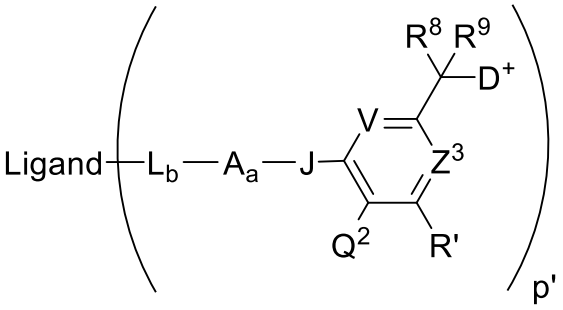
Principle examples of the disclosure are Ligand Drug Conjugate (LDC) compositions, wherein a LDC composition is represented by the structure of Formula 1

# CLAIMS

**1**. Use of a composition in the manufacture of a medicament for treating cancer or an autoimmune disease, wherein the composition comprises a Ligand Drug Conjugate (LDC) compound represented by the structure of Formula 2A or Formula 3F:




(Formula 2A)




(Formula 3F)

or a pharmaceutically acceptable salt thereof, wherein

"Ligand" is a Ligand Unit (L), wherein L is from an antibody, thereby defining an antibody drug conjugate (ADC), wherein the antibody is capable of selective binding to an antigen, wherein the antigen is an extracellularly accessible cell-surface protein or glycoprotein preferentially displayed by abnormal cells in comparison to normal cells, wherein the cells are mammalian cells of a subject intended for therapy and wherein the antigen is capable of cellular internalization upon said selective binding;

$L_b$ is a ligand covalent binding moiety;

$Q^1$ is $A_a$-W, wherein A is an optional Stretcher Unit so that subscript a is 0 when A is absent or 1 when A is present and optionally comprises two, three, or four subunits;

$Q^2$ is W'-E-';

W and W' are Cleavable Units, wherein

W of $Q^1$ is comprises a peptide sequence selectively cleavable by a lysosomal protease in comparison to serum proteases;

W' of $Q^2$ is a carbohydrate moiety, wherein W'-E- of $Q^2$ provides a glycosidic bond to the carbohydrate moiety, wherein the glycosidic bond is cleavable by an intracellular glycosidase,

V, $Z^1$, $Z^2$, and $Z^3$ are each =CH-;

R', $R^8$, and $R^9$ are each hydrogen;

E is -O'-, wherein O' represents the oxygen atom of the glycosidic bond to the carbohydrate moiety;

J is -NH-;

$D^+$ represents the structure of a quaternized tertiary amine-containing drug, wherein the tertiary amine-containing drug is covalently bonded to the -C($R^8$)($R^9$)- moiety through the quaternized tertiary amine,

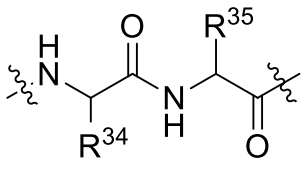
wherein the tertiary amine-containing drug (D) is a tertiary amine-containing tubulin disrupting agent; and

subscript p' is an integer ranging from 1 to 20; and

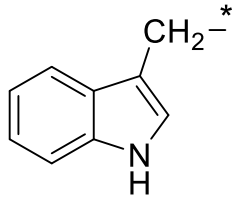
wherein said selective cleavage by the lysosomal protease or cleavage by the glycosidase initiates release of D from the Ligand Drug Conjugate compound.

**2.** The use of claim 1, wherein W of Formula 2A has a peptide bond to J that is selectively cleavable by the lysosomal protease and the carbohydrate moiety of Formula 3F is a glucuronic acid residue, wherein said cleavage by the intracellular glycosidase is by an intracellular glucuronidase.

**3.** The use of claim 1, wherein W of Formula 2A is a dipeptide moiety having the structure of Formula 6:



(Formula 6),

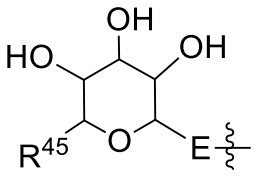
wherein $R^{34}$ is benzyl, methyl, isopropyl, isobutyl, sec-butyl, -CH(OH)$CH_3$, or has the structure of 

, wherein the asterisk indicates covalent bonding to the dipeptide backbone; and $R^{35}$ is methyl, –$(CH_2)_4$-$NH_2$, -$(CH_2)_3$NH(C=O)$NH_2$, -$(CH_2)_3$NH(C=NH)$NH_2$, or -$(CH_2)_2CO_2H$,

wherein the wavy line to the dipeptide's C-terminus indicates covalent bonding to J of the arylene moiety of Formula 2A and the wavy line to the dipeptide's N-terminus indicates covalent

bonding to A, or a subunit thereof, when subscript a is 1 or to $L_b$ when subscript a is 0, and wherein the dipeptide's bond to J is selectively cleavable by the lysosomal protease, and

wherein W'-E of Formula 3F has the structure of Formula 7:



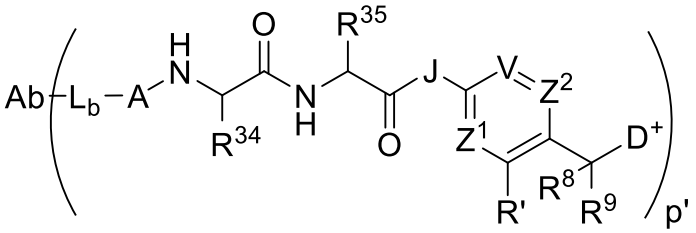

(Formula 7),

wherein the wavy line represents E bonded to the arylene moiety of Formula 3F,

wherein E is –O'-; and

$R^{45}$ is $–CH_2OH$ or $–CO_2H$.

**4.** The use of claim 1, wherein Formula 2A is represented by the structure of Formula 9:




(Formula 9)

wherein

Ab is an antibody Ligand Unit;

R', $R^8$, and $R^9$ are each hydrogen;

$R^{34}$ is methyl, isopropyl, or $-CH(OH)CH_3$;

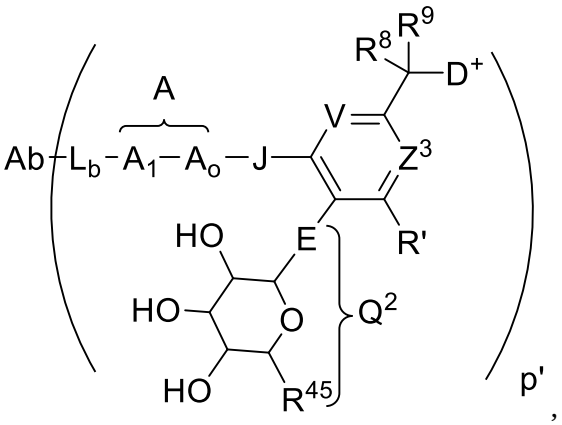
$R^{35}$ is methyl, $-(CH_2)_3NH(C=O)NH_2$ or $-(CH_2)_2CO_2H$;

J is –NH-; and

V, $Z^2$, and $Z^1$ are each =CH-,

and

Formula 3F is represented by the structure of Formula 11:



(Formula 11)

wherein

Ab is an antibody Ligand Unit;

$A_1$ and $A_O$ are independently selected subunits of A, wherein $A_O$ is an optional subunit of A so that $A_1$ becomes A when $A_O$ is absent and A is -$A_1$-$A_O$- when $A_O$ is present;

E is –O'-;

J is –NH-;

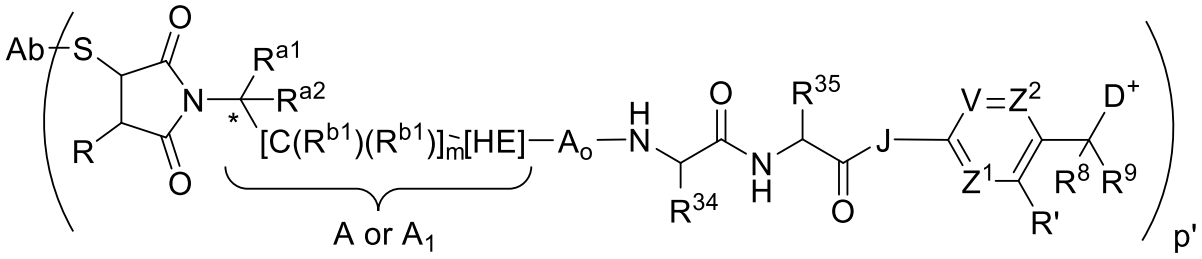
V and $Z^3$ are each =CH-;

R', $R^8$, and $R^9$ are each hydrogen;

$R^{45}$ is $–CO_2H$; and

subscript p' is an integer ranging from 1 to 8.

**5.** The use of claim 4, wherein Formula 2A is represented by the structure of Formula 10:



(Formula 10)

or a pharmaceutically acceptable salt thereof, wherein

S is a sulfur atom of the antibody Ligand Unit;

the asterisk (*) designates chirality or absence thereof at the indicated carbon atom;

$A_o$ is an optional subunit of A, wherein –[$C(R^{b1})(R^{b1})]_m$-[HE]- is A when $A_o$ is absent and is $A_1$ when $A_o$ is present so that A becomes -$A_1$-$A_o$-;

R is –H;

$R^{a1}$ is –H or a basic unit (BU), wherein BU has the structure of $–CH_2-N(R^{22})(R^{23})$, or an acid addition salt thereof, wherein $R^{22}$ and $R^{23}$ are each independently hydrogen, methyl, or ethyl, or both $R^{22}$ and $R^{23}$ together with the nitrogen atom to which they are attached define a 5- or 6-membered nitrogen-containing heterocycloalkyl;

$R^{a2}$ is hydrogen;

subscript m is an integer ranging from 0 to 4;

each $R^{b1}$ is hydrogen;

HE is –C(=O)-;

$R^{34}$ is methyl, isopropyl, or $-CH(OH)CH_3$;

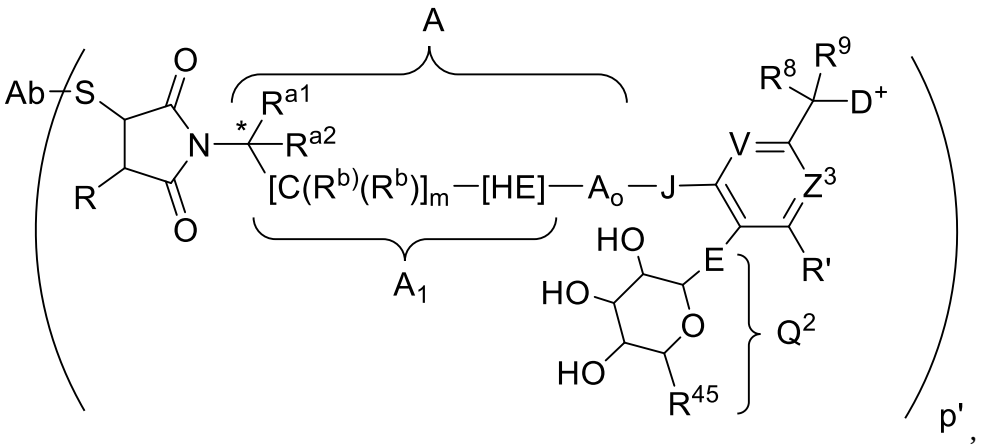
$R^{35}$ is $–(CH_2)_3NH(C=O)NH_2$ or $–(CH_2)_2CO_2H$;

J is –NH-; and

R', $R^8$, and $R^9$ are each hydrogen,

and

wherein Formula 3F is represented by the structure of Formula 12:




(Formula 12)

or a pharmaceutically acceptable salt thereof, wherein

S is a sulfur atom of the antibody Ligand Unit;

the asterisk (*) designates chirality or absence thereof at the indicated carbon atom;

$A_1$ and $A_O$ are independently selected subunits of A, wherein $A_O$ is an optional subunit of A, wherein–$[C(R^{b1})(R^{b1})]_m$-[HE]- is A when $A_O$ is absent and is $A_1$ when $A_O$ is present so that A becomes $A_1$-$A_O$, wherein $A_O$ when present corresponds in structure to an amine-containing acid bonded to J through the C-terminal carbonyl of the amine-containing acid;

R is hydrogen;

$R^{a1}$ is hydrogen or a basic unit (BU), wherein BU has the structure of $–CH_2-N(R^{22})(R^{23})$, or an acid addition salt thereof, wherein $R^{22}$ and $R^{23}$ are each independently hydrogen, methyl, or ethyl, or both $R^{22}$ and $R^{23}$ together with the nitrogen atom to which they are attached define a 5- or 6-membered nitrogen-containing heterocycloalkyl;

$R^{a2}$ is hydrogen;

subscript m is an integer ranging from 0 to 5;

each $R^{b1}$ independently is hydrogen or optionally substituted $C_1$-$C_6$ alkyl;

HE is absent or is –C(=O)-;

$R^{45}$ is $–CO_2H$;

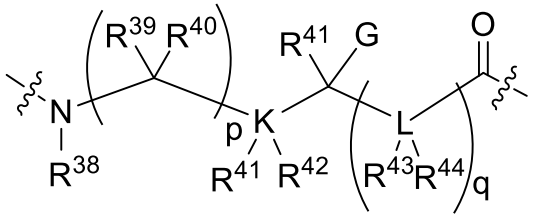
E is –O'-;

J is –NH-;

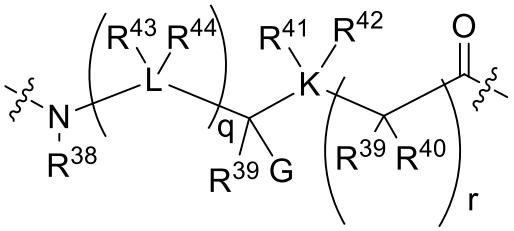
R', $R^8$, and $R^9$ are each hydrogen; and

subscript p' is an integer ranging from 1 to 8.

**6.** The use of claim 5, wherein $A_O$, when present, has the structure of Formula 13 or Formula 14:




(Formula 13)




(Formula 14)

wherein the wavy line to the carbonyl moiety of either structure represents the point of attachment of $A_O$ to W and wherein the wavy line to the amino moiety of either structure represents the point of attachment of $A_O$ to $A_1$,

wherein K and L independently are C, N, O, or S, provided that when K or L is O or S, $R^{41}$ and $R^{42}$ to K or $R^{43}$ and $R^{44}$ to L are absent, and when K or L is N, one of $R^{41}$ and $R^{42}$ to K or one of $R^{43}$ and $R^{44}$ to L is absent, and provided that no two adjacent L are independently selected as N, O, or S;

wherein subscript q is an integer ranging from 0 to 12, and each of subscript p and r is an integer ranging from 1 to 12;

wherein G is hydrogen, optionally substituted $C_1$-$C_6$ alkyl, -OH, $-OR^G$, $-CO_2H$, or $-CO_2R^G$, wherein $R^G$ is optionally substituted $C_1$-$C_6$ alkyl, optionally substituted aryl, or optionally substituted heteroaryl, or $R^{PR}$,

wherein $R^{PR}$ is a suitable protecting group, $-NH_2$, or $-N(R^G)(R^G)$, wherein each $R^G$ is independently optionally substituted $C_1$-$C_6$ alkyl, or optionally substituted heteroaryl, or both $R^G$ together with the nitrogen atom to which they are attached define a 5- or 6-membered heterocycloalkyl or both $R^G$ together form a suitable protecting group;

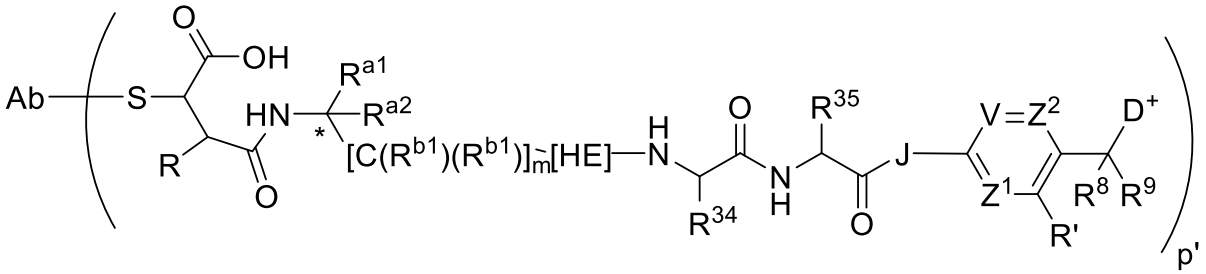
wherein $R^{38}$ is hydrogen or optionally substituted $C_1$-$C_6$ alkyl;

each $R^{39}$-$R^{44}$ is independently hydrogen, optionally substituted $C_1$-$C_6$ alkyl, or optionally substituted heteroaryl, or both $R^{39}$ and $R^{40}$ together with the carbon to which they are attached define a $C_3$-$C_6$ cycloalkyl, or $R^{41}$ and $R^{42}$ together with K to which they are attached when K is C, or $R^{43}$ and $R^{44}$ together with L to which they are attached when L is C, define a $C_3$-$C_6$ cycloalkyl, or $R^{40}$ and $R^{41}$, or $R^{40}$ and $R^{43}$, or $R^{41}$ and $R^{43}$ together with the carbon or heteroatom to which they are attached and atoms intervening between those carbon and/or heteroatoms define a 5- or 6-membered cycloalkyl or heterocycloalkyl, or

wherein $A_O$ has a structure corresponding to alpha-amino, beta-amino, or another amine-containing acid; and

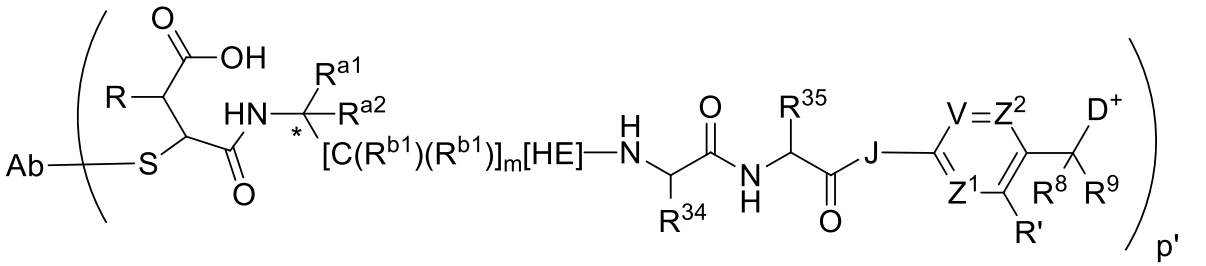
wherein the indicated starred (*) carbon atom is predominantly in the same absolute configuration as the alpha carbon atom of an **L**-amino acid when that indicated carbon atom has chirality.

**7.** The use of claim 1, wherein the Ligand Drug Conjugate compound has the structure of Formula 17A or Formula 17B:




(Formula 17A)

or




(Formula 17B)

or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit;

S is a sulfur atom of the antibody Ligand Unit;

the asterisk (*) designates chirality or absence thereof at the indicated carbon atom;

J is –NH-;

R is hydrogen;

$R^{a1}$ is a Basic Unit (BU), wherein BU has the structure of $–CH_2$-$N(R^{22})(R^{23})$, or an acid addition salt thereof, wherein $R^{22}$ and $R^{23}$ are each independently hydrogen or methyl, or both $R^{22}$ and $R^{23}$ together with the nitrogen atom to which they are attached define a 5- or 6-membered nitrogen-containing heterocycloalkyl;

$R^{a2}$ is hydrogen;

subscript m is an integer ranging from 0 to 4;

each $R^{b1}$ is hydrogen;

HE is–C(=O)-;

$R^{34}$ is methyl, isopropyl, or $-CH(OH)CH_3$;

$R^{35}$ is $–(CH_2)_3NH(C=O)NH_2$ or $–(CH_2)_2CO_2H$;

J is–NH;

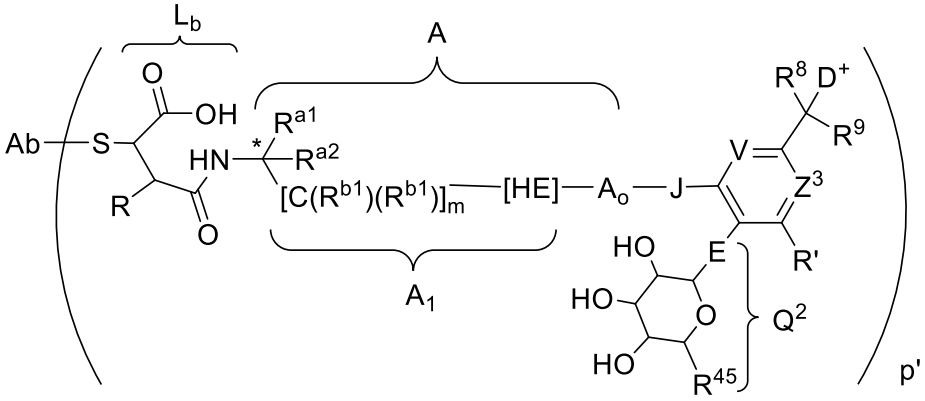
V, $Z^1$, and $Z^2$ are each =CH-;

R', $R^8$, and $R^9$ are each hydrogen; and

subscript p' is an integer ranging from 1 to 8.

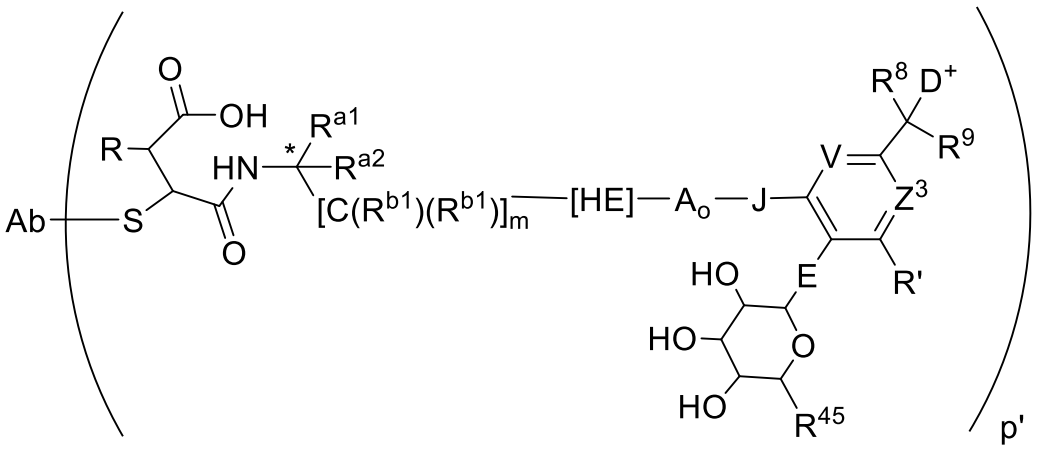
or

wherein the Ligand Drug Conjugate compound has the structure of Formula 19A or Formula 19B:




(Formula 19A)

or



(Formula 19B)

or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit;

S is a sulfur atom of the antibody Ligand Unit;

the asterisk (*) designates chirality or absence thereof at the indicated carbon atom;

$A_O$ is an optional subunit of A, wherein the $–[C(R^{b1})(R^{b1})]_m$-[HE]- moiety is A when $A_O$ is absent or the moiety is $A_1$ when $A_O$ is present so that A becomes $-A_1-A_O-$;

R is –H;

$R^{a1}$ is a Basic Unit (BU), wherein BU has the structure of $–CH_2-N(R^{22})(R^{23})$, or an acid addition salt thereof, wherein $R^{22}$ and $R^{23}$ are each independently hydrogen or methyl, or $R^{22}$ and $R^{23}$ both together with the nitrogen atom to which they are attached define a 5- or 6-membered nitrogen-containing heterocycloalkyl;

$R^{a2}$ is hydrogen;

subscript m is an integer ranging from 0 to 4;

each $R^{b1}$ is hydrogen;

HE is –C(=O)-;

$R^{45}$ is $–CO_2H$;

E is –O’-;

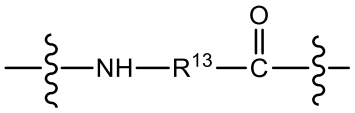
J is –NH-;

V and $Z^3$ are each =CH-;

R’, $R^8$, and $R^9$ are each hydrogen; and

subscript p’ is and integer ranging from 1 to 8.

**8.** The use of claim 7, wherein $A_O$, when present, has the structure of:



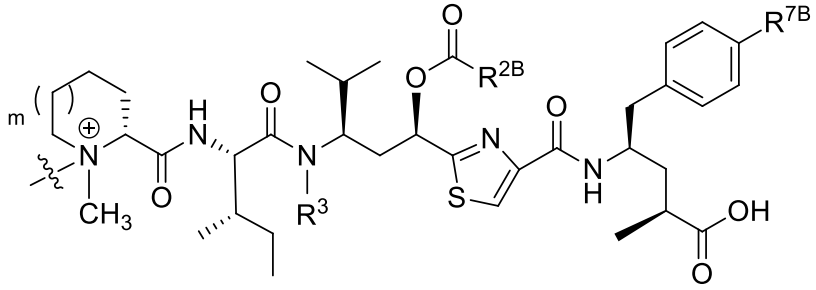

wherein $R^{13}$ is $-C_1-C_{10}$ alkylene-, $-C_3-C_8$ carbocyclo-, -arylene-, $-C_1-C_{30}$ heteroalkylene-, $-C_3-C_8$ heterocyclo-, $-C_1-C_{10}$ alkylene-arylene-, -arylene-$C_1-C_{10}$ alkylene-, $-C_1-C_{10}$ alkylene-($C_3-C_8$ carbocyclo)-, -($C_3-C_8$ carbocyclo)-$C_1-C_{10}$ alkylene-, $-C_1-C_{10}$ alkylene-($C_3-C_8$ heterocyclo)-, -($C_3-C_8$ heterocyclo)-$C_1-C_{10}$ alkylene-, $-(CH_2CH_2O)_{1-10}(-CH_2)_{1-3}-$, or $-(CH_2CH_2NH)_{1-10}(-CH_2)_{1-3}-$,

or wherein $A_O$ has a structure corresponding to alpha-amino or beta-amino acid; and

wherein the indicated starred (*) carbon atom of Formula 17A, Formula 17B, Formula 19A, or Formula 19B is predominantly in the same absolute configuration as the alpha carbon of an **L**-amino acid when that indicated carbon has chirality.

**9.** The use of claim 1, wherein $–D^+$ is a quaternized tertiary amine-containing tubulin disrupting agent.

**10.** The use of claim 9, wherein the quaternized tertiary amine-containing tubulin disrupting agent $–D^+$ is a quaternized tubulysin Drug Unit having the structure of:



or a pharmaceutically acceptable salt thereof, wherein

the wavy line indicates covalent attachment of $–D^+$ to the benzylic carbon atom of the -$C(R^8)(R^9)$- moiety of Formula 2A or Formula 3F;

subscript m is 1;

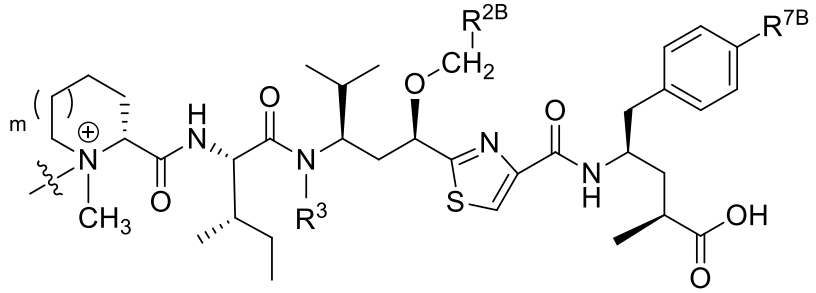
$-OC(O)R^{2B}$ is $–OC(O)CH_3$, $-OC(O)CH_2CH_3$, $-OC(O)CH(CH_3)_2$, $-OC(O)C(CH_3)_3$, or $–OC(O)CH=CH_2$;

$R^3$ is methyl, ethyl, or propyl; and

$R^{7B}$ is hydrogen or –OH,

or

$–D^+$ has the structure of:



or a pharmaceutically acceptable salt thereof, wherein

the wavy line indicates covalent attachment of $–D^+$ to the benzylic carbon atom of the -$C(R^8)(R^9)$- moiety Formula 2A or Formula 3F;

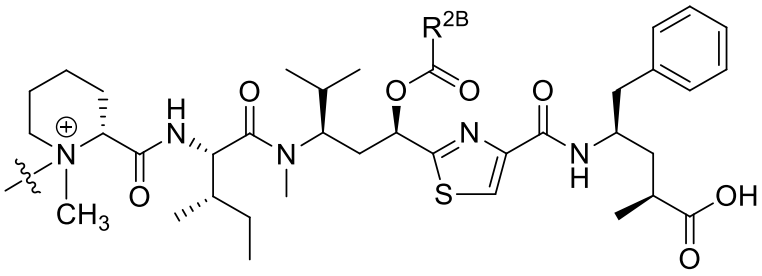
subscript m is 1;

$–OCH_2R^{2B}$ is $–OCH_3$, $-OCH_2CH_3$, $-OCH_2CH_2CH_3$, or $–OCH_2OCH_3$;

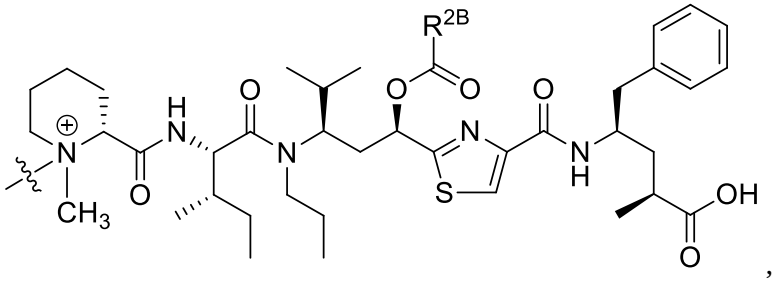
$R^3$ is methyl, ethyl, or propyl; and

$R^{7B}$ is hydrogen or –OH.

**11.** The use of claim 10, wherein the quaternized tubulysin Drug Unit $-D^+$ has the structure of:




or




,

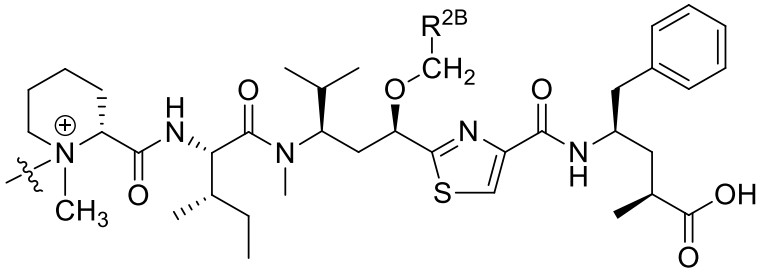
or a pharmaceutically acceptable salt thereof, wherein

subscript m is 1;

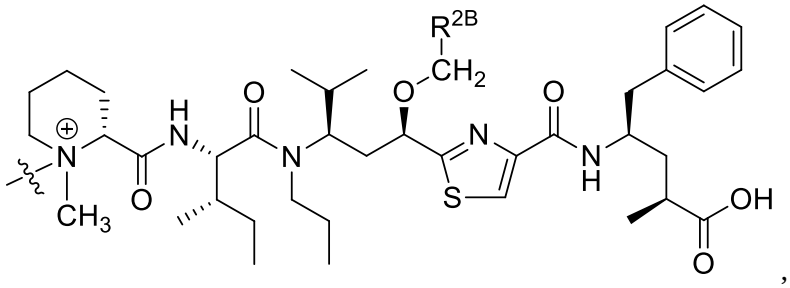
$R^{2B}$ is $-CH_3$, $-CH_2CH_3$, $-CH_2CH_2CH_3$, $-CH(CH_3)_2$, $-CH_2CH(CH_3)_2$, or $-CH_2C(CH_3)_3$,

or

$-D^+$ has the structure of:




or

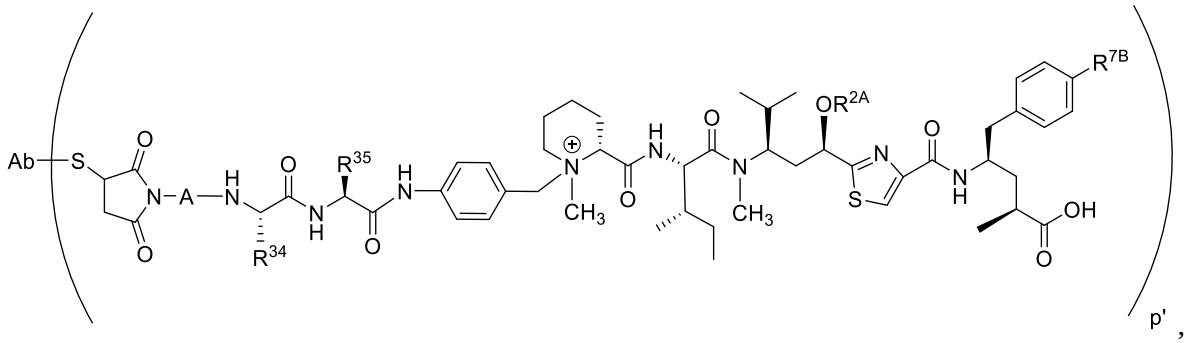



,

or a pharmaceutically acceptable salt thereof, wherein

$R^{2B}$ is hydrogen, methyl, or $-OCH_3$ so that $-OCH_2R^{2B}$ is a methyl, ethyl, or methoxymethyl ether O-linked substituent.

**12.** The use of claim 1, wherein Formula 2A is represented by the structure of:



or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit;

S is a sulfur atom of the antibody Ligand Unit and the succinimide ring to which it is covalently attached is optionally in hydrolysed form;

$R^{34}$ is isopropyl and $R^{35}$ is $–CH_3$, isopropyl, $–CH_2CH_2CH_2NH(C=O)NH_2$, or $–CH_2CH_2CO_2H$;

$R^{7B}$ is hydrogen or –OH;

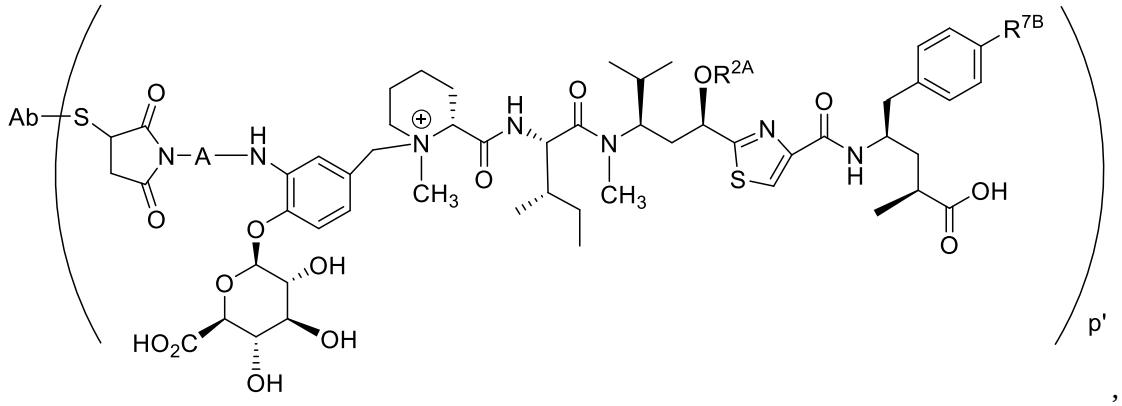
$R^{2A}$ is lower alkyl or $–C(=O)R^{2B}$, wherein $R^{2B}$ is lower alkyl;

subscript p' is an integer ranging from 1 to 8; and

A is $–CH_2(CH_2)_4(C=O)-$ or $–CH_2(CH_2)_4(C=O)NHCH_2CH_2(C=O)-$,

and

wherein Formula 3F is represented by the structure of:



or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit and the succinimide ring to which it is covalently attached is optionally in hydrolysed form;

S is a sulfur atom of the antibody Ligand Unit;

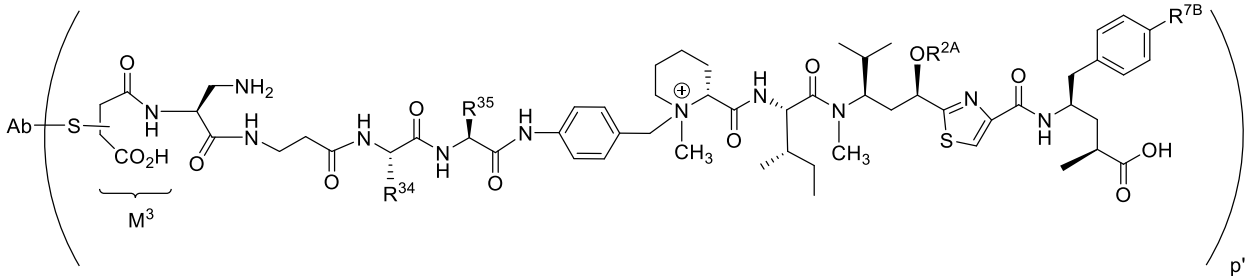
$R^{7B}$ is hydrogen or –OH;

$R^{2A}$ is $C_1$-$C_6$ alkyl, $-CH_2OR^{2B}$, or $–C(=O)R^{2B}$, wherein $R^{2B}$ is $C_1$-$C_6$ alkyl or $C_2$-$C_6$ alkenyl;

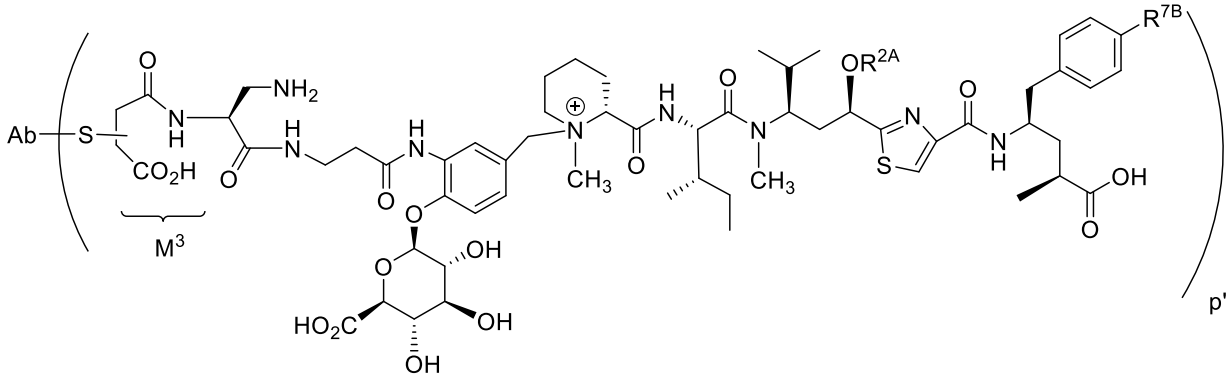
subscript p' is an integer ranging from 1 to 8; and

A is $–CH_2(CH_2)_4(C=O)-$ or $–CH_2(CH_2)_4(C=O)NHCH_2CH_2(C=O)-$.

**13.** The use of claim 1, wherein the Ligand Drug Conjugate compound is represented by the structure of:



or



or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit;

S is a sulfur atom of the antibody Ligand Unit;

the Ab-S- moiety is bonded to the carbon α or β to the $M^3$ carboxylic acid;

subscript p' is an integer ranging from 1 to 8;

$R^{7B}$ is hydrogen or –OH;

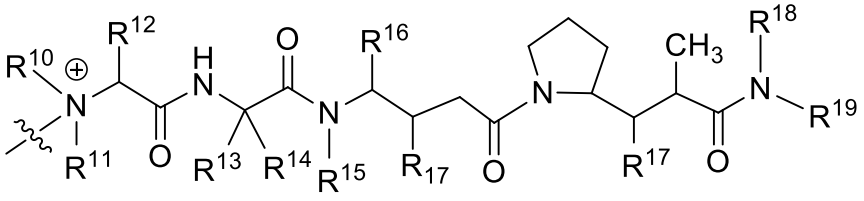
$R^{34}$ is isopropyl and $R^{35}$ is $–CH_3$, isopropyl, $–CH_2CH_2CH_2NH(C=O)NH_2$, or $–CH_2CH_2CO_2H$; and

$R^{2A}$ is $–C(O)CH_3$, methyl, ethyl, or propyl.

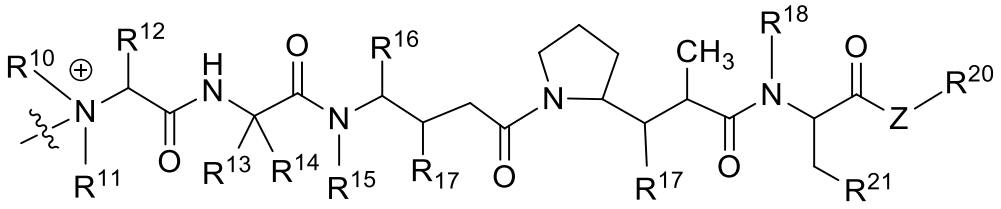
**14.** The use of claim 1, wherein the quaternized tertiary amine-containing tubulin disrupting agent $–D^+$ is

a quaternized dolastatin 10 or a quaternized dolastatin 15, or

a quaternized auristatin having the structure of $D_E$' or $D_F$':



($D_E$'),



($D_F$'),

or a pharmaceutically acceptable salt thereof, wherein, wherein

the wavy line indicates covalent attachment of $–D^+$ to the benzylic carbon atom of the -$C(R^8)(R^9)$- moiety of Formula 2A or Formula 2F;

$R^{10}$ and $R^{11}$ are each independently $C_1$-$C_8$ alkyl;

$R^{12}$ is hydrogen, $C_1$-$C_8$ alkyl, $C_3$-$C_8$ cycloalkyl, aryl, -$X^1$-aryl, -$X^1$-($C_3$-$C_8$ cycloalkyl), $C_3$-$C_8$ heterocycle, or -$X^1$-($C_3$-$C_8$ heterocycle);

$R^{13}$ is hydrogen, $C_1$-$C_8$ alkyl, $C_3$-$C_8$ cycloalkyl, aryl, -$X^1$-aryl, -$X^1$-($C_3$-$C_8$ cycloalkyl), $C_3$-$C_8$ heterocycle, or -$X^1$-($C_3$-$C_8$ heterocycle);

$R^{14}$ is hydrogen or methyl, or

$R^{13}$ and $R^{14}$ taken together with the carbon atom to which they are attached define a $C_3$-$C_8$ cycloalkyl;

$R^{15}$ is hydrogen or $C_1$-$C_8$ alkyl;

$R^{16}$ is hydrogen, $C_1$-$C_8$ alkyl, $C_3$-$C_8$ cycloalkyl, aryl, -$X^1$-aryl, -$X^1$-($C_3$-$C_8$ cycloalkyl), $C_3$-$C_8$ heterocycle, or -$X^1$-($C_3$-$C_8$ heterocycle);

each $R^{17}$ is independently hydrogen, -OH, $C_1$-$C_8$ alkyl, $C_3$-$C_8$ cycloalkyl, or O-($C_1$-$C_8$ alkyl);

each $R^{18}$ is independently hydrogen or $C_1$-$C_8$ alkyl;

$R^{19}$ is $–C(R^{19A})_2–C(R^{19A})_2–$aryl, $–C(R^{19A})_2–C(R^{19A})_2–$($C_3$-$C_8$ heterocycle) , or $–C(R^{19A})_2–C(R^{19A})_2–$($C_3$-$C_8$ cycloalkyl), wherein $R^{19A}$ is hydrogen, $C_1$-$C_8$ alkyl, or –OH;

$R^{20}$ is hydrogen, $C_1$-$C_{20}$ alkyl, aryl, $C_3$-$C_8$ heterocycle, -$(R^{47}O)_m$-$R^{48}$, or -$(R^{47}O)_m$-$CH(R^{49})_2$;

$R^{21}$ is aryl or $C_3$-$C_8$ heterocycle;

subscript m is an integer ranging from 1-1000;

$R^{47}$ is $C_2$-$C_8$ alkyl;

$R^{48}$ is hydrogen or $C_1$-$C_8$ alkyl;

each $R^{49}$ is independently -COOH, $–(CH_2)_n$-$N(R^{50})_2$, $–(CH_2)_n$-$SO_3H$, or $–(CH_2)_n$-$SO_3$-$C_1$-$C_8$ alkyl;

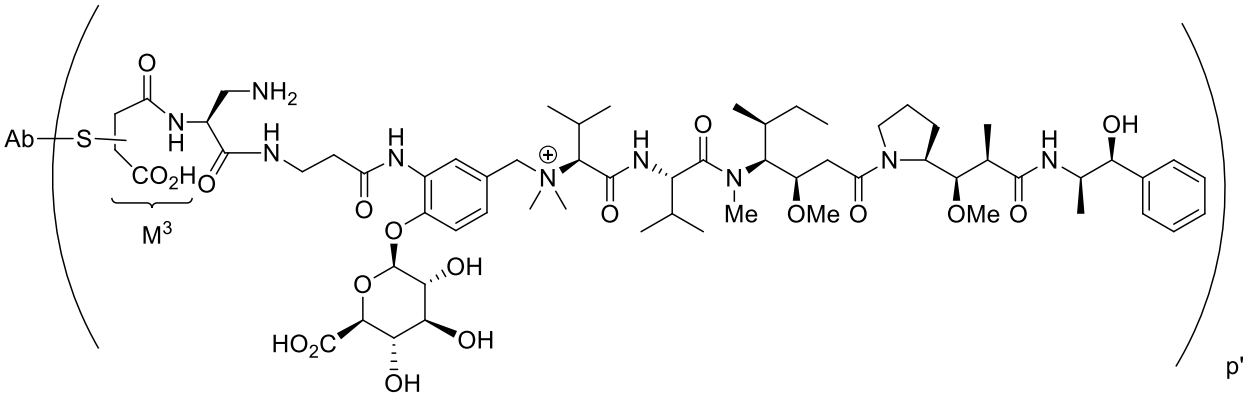
each $R^{50}$ is independently $C_1$-$C_8$ alkyl or $–(CH_2)_n$-COOH;

Z is O, S, NH, or $NR^{46}$, wherein $R^{46}$ is $C_1$-$C_8$ alkyl;

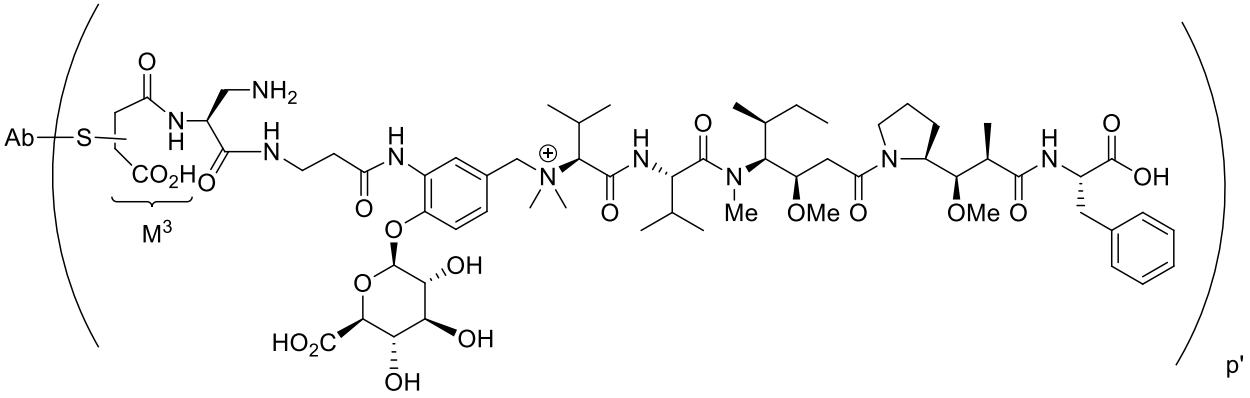
$X^1$ is $C_1$-$C_{10}$ alkylene; and

subscript n is an integer ranging from 0 to 6.

**15.** The use of claim 14, wherein the Ligand Drug Conjugate compound is represented by:



or



or a pharmaceutically acceptable salt thereof, wherein

Ab is an antibody Ligand Unit;

S is a sulfur atom of the antibody Ligand Unit;

the Ab-S- moiety is bonded to the carbon α or β to the $M^3$ carboxylic acid; and

subscript p' is an integer ranging from 1 to 8.

**16.** The use of any one of claims 5-8, 13, and 15, wherein the sulfur atom is from a cysteine residue of a reduced interchain disulfide bond of the antibody.

**17.** The use of claim 16, wherein the antibody is a monoclonal antibody.

**18.** The use of claim 17, wherein the monoclonal antibody is a chimeric antibody or a humanized antibody.