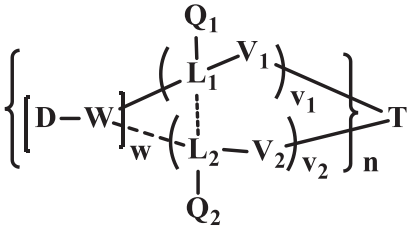
CLAIMS

What is claimed is:

1. A side chain-linked conjugate compound of the Formula (II):



(II)

wherein

"——" represents a single bond; n is 1 to 30;

------ is a single bond, double bond or absent,

T is a cell-binding agent/ molecule, selected from the group consisting of an antibody, a single chain antibody, an antibody fragment that binds to a target cell, a monoclonal antibody, a single chain monoclonal antibody, a monoclonal antibody fragment that binds to the target cell, a chimeric antibody, a chimeric antibody fragment that binds to the target cell, a domain antibody, a domain antibody fragment that binds to the target cell;

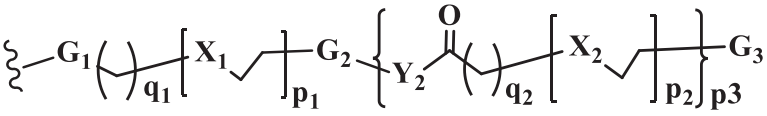
L_1 is NHCHCO;

W is  (m=0-20); w is 1;

V_1 and V_2 are independently a spacer unit and V_1 comprising formula (1), V2 comprising formula (2); and v_1 and v_2 are 1;

 (1), $*(CH_2CH_2O)_r*$ (2)

Q_1 is represented by Formula (I-q1):



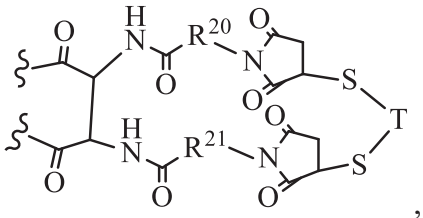
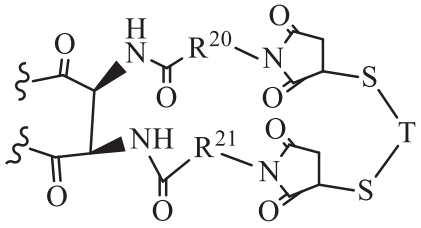
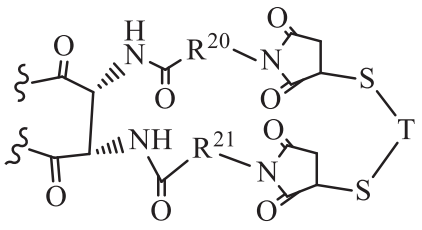
(I-q1);

wherein ~~~ is the site linked to L_1; G_1 and G_2 are CH_2; G_3 is OH or OR_{12}; X_2 is O; Y_2 is NH or NR_{12}; p_1 is 0, p_2 and p_3 are independently 0 -100 but p_1 and p_3 are not 0 at the same time; q_1 and q_2 are independently 0 -24; R_{12}, $R_{12'}$, R_{13} and $R_{13'}$ are independently H, C_1~C_8 alkyl; C_2~C_8

heteroalkyl, or heterocyclic; C_3~C_8 aryl, Ar-alkyl, cycloalkyl, alkylcycloalkyl, heterocycloalkyl, heteroalkylcycloalkyl, carbocyclic, or alkylcarbonyl;;

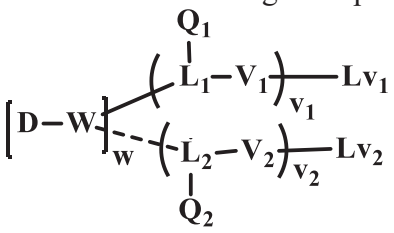
Q_2 and L_2 are absent;

the conjugate compound having one or more of the following the linkage structures:


,

,

,

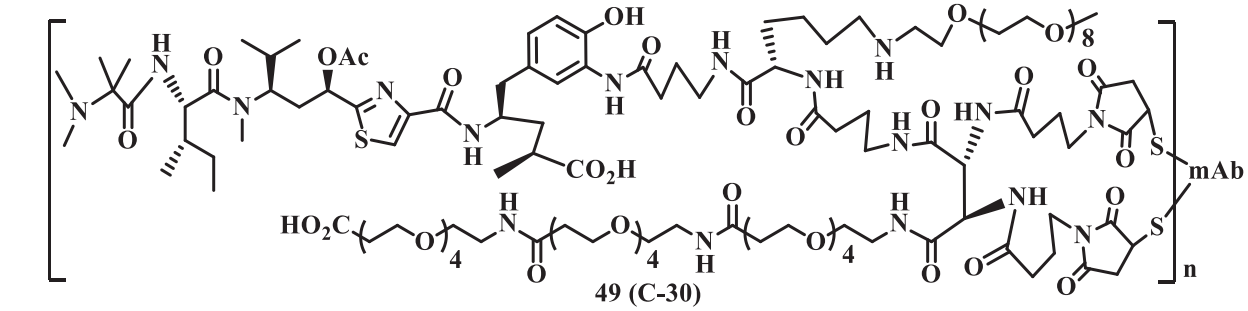
D is a cytotoxic agent that is independently selected from calicheamicins, maytansinoids, camptothecins, taxanes, anthracyclines (daunorubicin/doxorubicin), vinca alkaloids, auristatins, eribulins, (pyrrolo)benzodiazepines (PBDs), CC-106/duocarmycins, tubulysins, amatoxins, protein kinase inhibitors, MEK inhibitors, KSP inhibitors, nicotinamide phosphoribosyltransferase (NAMPT) inhibitors, or immunotoxins;

2. A side chain-linkage compound of Formula (V):

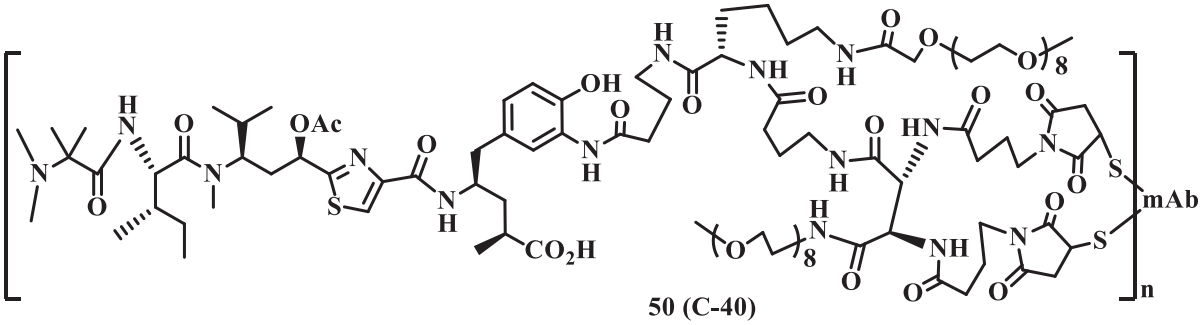

(V)

wherein D, W, w, L_1, L_2, Q_1, Q_2, V_1, V_2, v_1, v_2, and ------, are defined the same as in Claim 1; wherein Lv_1 and Lv_2 have independently the same definition of Lv_1 in of Claim 3.

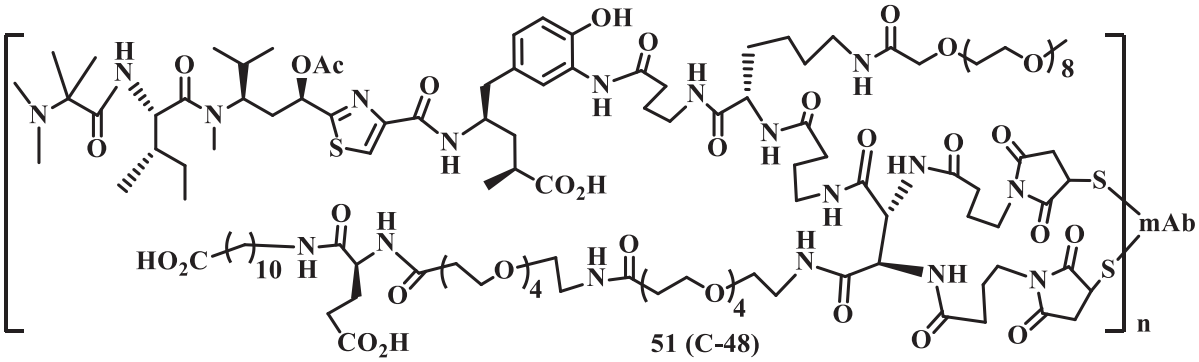
3. The conjugate compound according to Claim **1** having the following structures of 49 (C-30), 50 (C-40), or 51 (C-48) illustrated below:



49 (C-30)



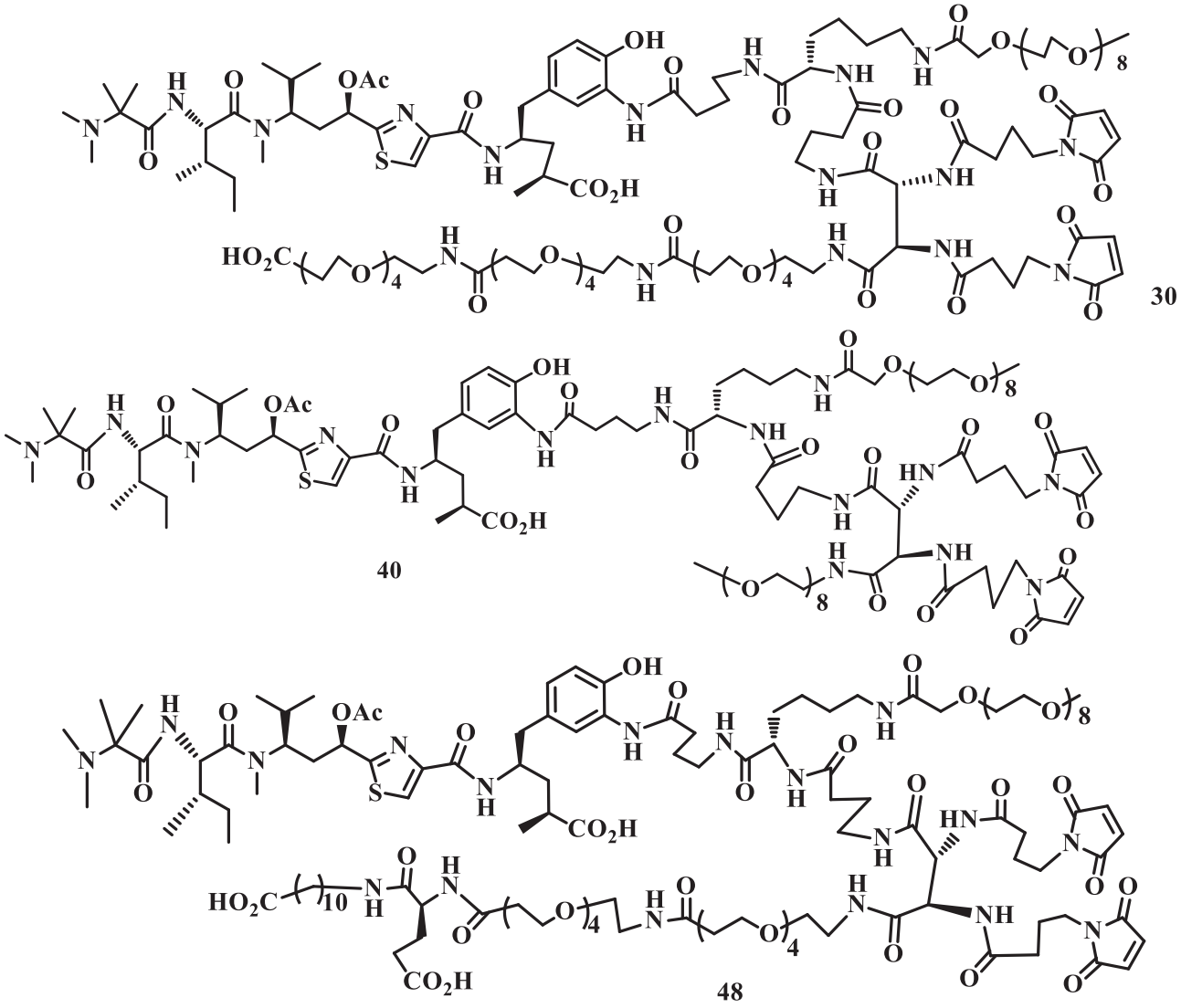
50 (C-40)



51 (C-48)

or pharmaceutically acceptable salts, hydrates, or hydrated salts; or the polymorphic crystalline structures of these compounds; or the optical isomers, racemates, diastereomers or enantiomers;

4. The compound according to Claim **2** having the following structures 30, 40, or 48 illustrated below:



or pharmaceutically acceptable salts, hydrates, or hydrated salts; or the polymorphic crystalline structures of these compounds; or the optical isomers, racemates, diastereomers or enantiomers.

5. A pharmaceutical composition for the treatment or prevention of a cancer, or an autoimmune disease, or an infectious disease comprising a therapeutically effective amount of the conjugate compounds of any one of claim **1** or **3,** and a pharmaceutically acceptable salt, carrier, diluent, or excipient therefore, or a combination of the conjugates thereof.

6. The pharmaceutical composition either in in the liquid formula or in the formulated lyophilized solid/powder according to Claim **7**, comprising by weight of: 0.01%-99% of one or more conjugates of any one of claim **1** or **3**; 0.0%-20.0% of one or more polyols; 0.0%-2.0% of one or more surfactants; 0.0% -5.0% of one or more preservatives; 0.0% -30% of one or more amino acids;

0.0% -5.0% of one or more antioxidants; 0.0% -0.3% of one or more metal chelating agents; 0.0% -30.0% of one or more buffer salts for adjusting pH of the formulation to pH 4.5 to 7.5; and 0.0% -30.0% of one or more of isotonic agent for adjusting osmotic pressure between about 250 to 350 mOsm when reconstituted for administration to a patient;

wherein the polyol is selected from fructose, mannose, maltose, lactose, arabinose, xylose, ribose, rhamnose, galactose, glucose, sucrose, trehalose, sorbose, melezitose, raffinose, mannitol, xylitol, erythritol, maltitol, lactitol, erythritol, threitol, sorbitol, glycerol, or L-gluconate and its metallic salts);

wherein the surfactant is selected from polysorbate 20, polysorbate 40, polysorbate 65, polysorbate 80, polysorbate 81, or polysorbate 85, poloxamer, poly(ethylene oxide)-poly(propylene oxide), polyethylene-polypropylene, Triton; sodium dodecyl sulfate (SDS), sodium laurel sulfate; sodium octyl glycoside; lauryl-, myristyl-, linoleyl-, or stearyl-sulfobetaine; lauryl-, myristyl-, linoleyl- or stearyl-sarcosine; linoleyl-, myristyl-, or cetyl-betaine; lauroamidopropyl-, cocamidopropyl-, linoleamidopropyl-, myristamidopropyl-, palmidopropyl-, or isostearamidopropyl-betaine (lauroamidopropyl); myristamidopropyl-, palmidopropyl-, or isostearamidopropyl-dimethylamine; sodium methyl cocoyl-, or disodium methyl oleyl-taurate; dodecyl betaine, dodecyl dimethylamine oxide, cocamidopropyl betaine and coco ampho glycinate; or isostearyl ethylimidonium ethosulfate; polyethyl glycol, polypropyl glycol, and copolymers of ethylene and propylene glycol;

wherein the preservative is selected from benzyl alcohol, octadecyldimethylbenzyl ammonium chloride, hexamethonium chloride, benzalkonium chloride, benzethonium chloride, phenol, butyl and benzyl alcohol, alkyl parabens, catechol, resorcinol, cyclohexanol, 3-pentanol, or m-cresol;

wherein the amino acid is selected from arginine, cystine, glycine, lysine, histidine, ornithine, isoleucine, leucine, alanine, glycine glutamic acid or aspartic acid;

wherein the antioxidant is selected from ascorbic acid, glutathione, cystine or and methionine;

wherein the chelating agent is selected from EDTA or EGTA;

wherein the buffer salt is selected from sodium, potassium, ammonium, or trihydroxyethylamino salts of citric acid, ascorbic acid, gluconic acid, carbonic acid, tartaric acid, succinic acid, acetic acid or phthalic acid; Tris or tromethamine hydrochloride, phosphate or sulfate; arginine, glycine, glycylglycine, or histidine with anionic acetate, chloride, phosphate, sulfate, or succinate salts;

wherein the tonicity agent is selected from mannitol, sorbitol, sodium acetate, potassium chloride, sodium phosphate, potassium phosphate, trisodium citrate, or sodium chloride.