(e.g., growth factor). Non-limiting examples of non-functional antibodies that have indirect cell killing activity include huMov19, huMy9-6, and huB4.

By "huB4" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD19, such as human CD19. An exemplary huB4 antibody of the invention may include the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huB4 LC
EIVLTQSPAIMSASPGERVTMTC**SASSGVNYMH**WYQQKPGTSPRRWIY**DTSKLA**
SGVPARFSGSGSGTDYSLTISSMEPEDAATYYC**HQRGSYT**FGGGTKLEIKRTVAA
PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huB4 HC
QVQLVQPGAEVVKPGASVKLSCKTSGYTFT**SNWMH**WVKQAPGQGLEWIG**EIDP**
SDSYTNYNQNFQGKAKLTVDKSTSTAYMEVSSLRSDDTAVYYCAR**GSNPYYYA**
MDYWGQGTSVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVS
WNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD
KKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSH
EDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSD
IAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPGK

By "huB4-SPDB-DM4" is meant an antibody drug conjugate that includes an huB4 antibody, which specifically binds CD19, conjugated to the cytotoxic maytansinoid, $N^{2'}$-deacetyl-$N^{2'}$-(4-mercapto-4-methyl-1-oxopentyl) maytansine (DM4) via the linker N-succinimidyl 4-(2-pyridyldithio)butanoate (SPDB). huB4-SPDB-DM4 is described, for example, in U.S. Patent No. 8,435,528 and International Pat. Appl. Publication No. WO2004/103272, which are incorporated herein by reference in their entireties.

By "huMov19" (also termed "M9346A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds folate receptor alpha (also known as folate receptor 1 or "FOLR1" herein). Detailed sequences for huMov19 are described in U.S. Patent Nos. 8,557 ,966 and 8,709,432 and International Pat. Appl. Publication Nos.: WO2011/106528, which are incorporated herein by reference in their entireties. Exemplary huMOV19 antibodies of the invention may include the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huMovl9 LC v1.00
DIVLTQSPLSLAVSLGQPAIISC**KASQSVSFAGTSLMH**WYHQKPGQQPRLLIY**RA**
SNLEAGVPDRFSGSGSKTDFTLNISPVEAEDAATYYC**QQSREYPYT**FGGGTKLEI

KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMovl9 LC v1.60

DIVLTQSPLSLAVSLGQPAIISC**KASQSVSFAGTSLMH**WYHQKPGQQPRLLIY**RA**
SNLEAGVPDRFSGSGSKTDFTLTISPVEAEDAATYYC**QQSREYPYT**FGGGTKLEI
KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMovl9 HC

QVQLVQSGAEVVKPGASVKISCKASGYTFT**GYFMN**WVKQSPGQSLEWIG**RIHP**
YDGDTFYNQKFQGKATLTVDKSSNTAHMELLSLTSEDFAVYYCTR**YDGSRAM**
DYWGQGTTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDK
KVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE
DPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKC
KVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDI
AVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPG

By "huMov19-sulfo-SPDB-DM4" (also termed "IMGN853") is meant an antibody drug conjugate that comprises an huMov19 antibody, which specifically binds FOLR1, conjugated to the cytotoxic maytansinoid, $N^{2'}$-deacetyl-$N^{2'}$-(4-mercapto-4-methyl-1-oxopentyl) maytansine (DM4) via the disulfide-containing linker N-succinimidyl 4-(2-pyridyldithio)-2-sulfobutanoate (sSPDB). The ADC huMov19-sulfo-SPDB-DM4 is described, for example, by Ab et al., AACR, Cancer Res 2011;71(8 Suppl):Abstract number 4576, and U.S. Patent Nos. 8,557 ,966 and 8,709,432 and International Pat. Appl. Publication Nos.: WO2011/106528 which are each incorporated herein by reference in their entirety.

By "huDS6" is meant a humanized antibody or epitope binding fragment thereof that specifically binds a CA6 sialoglycotope on the Muc1 mucin receptor (e.g., human Muc1) expressed by cancerous cells. Exemplary sequences for huDS6 are described in U.S. Patent No. 7,834,155 and International Pat. Appl. Publication Nos.: WO2005/009369 and WO2007/024222, which are incorporated herein by reference in their entireties. An exemplary huDS6 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences :

huDS6 LC

EIVLTQSPATMSASPGERVTITC**SAHSSVSFMH**WFQQKPGTSPKLWIY**STSSLAS**G
VPARFGGSGSGTSYSLTISSMEAEDAATYYC**QQRSSFPLT**FGAGTKLELKRTVAA

PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huDS6 HC

QAQLVQSGAEVVKPGASVKMSCKASGYTFT**SYNMH**WVKQTPGQGLEWIG**YIY**
PGNGATNYNQKFQGKATLTADTSSSTAYMQISSLTSEDSAVYFCAR**GDSVPFA**
YWGQGTLVTVSAASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKK
VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED
PEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIA
VEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEA
LHNHYTQKSLSLSPGK

By "huMy9-6" (also termed "Z4681A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds leukocyte differentiation antigen CD33, such as human CD33. Exemplary sequences for the huMy9-6 heavy chain variable region portion are described in U.S. Patent Publication No. 20060177455, which is incorporated herein by reference in its entirety. Exemplary sequences for the huMy9-6 light chain variable region portion are known in the art and described in U.S. Patent Nos. 7,557,189, 7,342,110, 8,119,787 and 8,337,855, which are incorporated herein by reference in their entireties. An exemplary huMy9-6 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

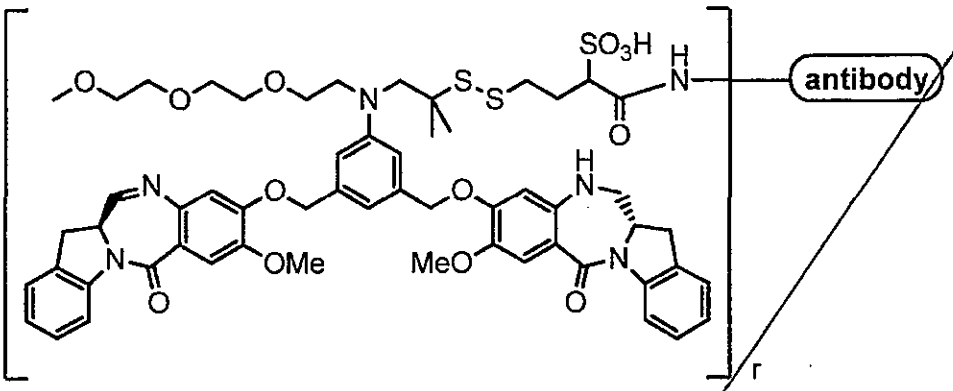
huMy9-6 LC

EIVLTQSPGSLAVSPGERVTMSC**KSSQSVFFSSSQKNYL**AWYQQIPGQSPRLLIY
WASTRESGVPDRFTGSGSGTDFTLTISSVQPEDLAIYYC**HQYLSSRT**FGQGTKLEI
KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMy9-6 HC

QVQLQQPGAEVVKPGASVKMSCKASGYTFT**SYYIH**WIKQTPGQGLEWVG**VIYP**
GNDDISYNQKFQGKATLTADKSSTTAYMQLSSLTSEDSAVYYCAR**EVRLRYFD**
VWGQGTTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS
GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKV
EPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDP
EVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKV
SNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAV
EWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEAL
HNHYTQKSLSLSPG

By "huMy9-6-sulfo-SPDB-DGN462" (also termed "IMGN779") is meant an anti-*huCD33 antibody conjugated to an indolinobenzodiazepine dimer containing a mono-imine* moiety termed DGN462 via a cleavable disulfide linker.



By "huEGFR-7R" (also termed "J2898A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds EGFR, such as human EGFR. An exemplary huEGFR-7R antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huEGFR-7R LC v1.0
DIQMTQSPSSLSASVGDRVTITC**RASQDINNYLA**WYQHKPGKGPKLLIH**YTSTLH**
PGIPSRFSGSGSGRDYSFSISSLEPEDIATYYC**LQYDNLLYT**FGQGTKLEIKRTVAA
PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huEGFR-7R LC v1.01
DIQMTQSPSSLSASVGDRVTITC**KASQDINNYLA**WYQHKPGKGPKLLIH**YTSTL**
HPGIPSRFSGSGSGRDYSFSISSLEPEDIATYYC**LQYDNLLYT**FGQGTKLEIKRTV
AAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE
QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huEGFR-7R HC
QVQLVQSGAEVAKPGASVKLSCKASGYTF**TSYWMQ**WVKQRPGQGLECIG**TIYP**
GDGDTTYTQKFQGKATLTADKSSSTAYMQLSSLRSEDSAVYYCAR**YDAPGYA**
MDYWGQGTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVS
WNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD
KKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSH
EDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSD
IAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPG

By "huEGFR-7R-SMCC-DM1" (also termed "IMGN289") is meant an antibody drug conjugate that comprises an huEGFR-7R antibody, which specifically binds EGFR, conjugated to the maytansinoid N(2')-deacetyl-N(2')-(3-mercapto-1-oxopropyl)-maytansine (DM1) via the linker N-succinimidyl 4-(maleimidomethyl)cyclohexanecarboxylate (SMCC). The ADC huEGFR-7R-SMCC-DM1 is described, for example, in U.S. Patent No. 8,790,649 and International Pat. Appl. Publication No. WO2012/058588, which are incorporated herein by reference in their entireties.

By "huCD37-3" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD37, such as human CD37. Exemplary sequences for huCD37-3 are described in U.S. Patent No. 8,765,917 and International Pat. Appl. Publication No. WO2011/112978, which are incorporated herein by reference in their entireties. An exemplary huCD37-3 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huCD37-3 LC
DIQMTQSPSSLSVSVGERVTITC**RASENIRSNLA**WYQQKPGKSPKLLVN**VATNLA**
DGVPSRFSGSGSGTDYSLKINSLQPEDFGTYYC**QHYWGTTWT**FGQGTKLEIKRT
VAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESV
TEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huCD37-3 HC v1.0
QVQVQESGPGLVAPSQTLSITCTVSGFSLT**TSGVS**WVRQPPGKGLEWLG**VIWGD**
GSTNYHPSLKSRLSIKKDHSKSQVFLKLNSLTAADTATYYCAK**GGYSLAH**WGQ
GTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALT
SGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKS
CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF
NWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY
TQKSLSLSPG

huCD37-3 HC v1.1
QVQVQESGPGLVAPSQTLSITCTVSGFSLT**TSGVS**WVRQPPGKGLEWLG**VIWGD**
GSTNYHSSLKSRLSIKKDHSKSQVFLKLNSLTAADTATYYCAK**GGYSLAH**WGQ
GTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALT
SGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKS
CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF
NWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY
TQKSLSLSPG

By "huCD37-3-SMCC-DM1" (also termed "IMGN529") is meant an antibody drug conjugate that comprises a humanized IgG1 antibody K7153A that specifically binds CD37 that is covalently linked via the uncleavable, maleimide-derived thioether-based linker succinimidyl 4-[N-maleimidomethyl]cyclohexane-1-carboxylate (SMCC) to the maytansinoid N(2')-deacetyl-N(2')-(3-mercapto-1-oxopropyl)-maytansine (DM1).

By "huCD37-50" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD37, such as human CD37. Exemplary sequences for huCD37-50 are described in U.S. Patent No. 8,765,917 and International Pat. Appl. Publication No. WO2011/112978, which are incorporated herein by reference in their entireties. An exemplary huCD37-50 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huCD37-50 LC
EIVLTQSPATMSASPGERVTMTC**SATSSVTYMH**WYQQKPGQSPKRWIY**DTSNLP**
YGVPARFSGSGSGTSYSLTISSMEAEDAATYYC**QQWSDNPPT**FGQGTKLEIKRT
VAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESV
TEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huCD37-50 HC
QVQLQESGPGLLKPSQSLSLTCTVSGYSITSGFAWHWIRQHPGNKLEWMG**YILY**
SGSTVYSPSLKSRISITRDTSKNHFFLQLNSVTAADTATYYCAR**GYYGYGAWFA**
YWGQGTLVTVSAASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKK
VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED
PEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIA
VEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEA
LHNHYTQKSLSLSPG

By "huAnti-CD123" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD123, such as human CD123. Exemplary huAnti-CD123 antibodies are described in U.S. Provisional Appl. Ser. No. 62/186,161, which is incorporated herein by reference in its entirety.

The term "antibody" means an immunoglobulin molecule that recognizes and specifically binds to a target, such as a protein, polypeptide, peptide, carbohydrate, polynucleotide, lipid, or combinations of the foregoing through at least one antigen recognition site within the variable region of the immunoglobulin molecule. As used herein, the term "antibody" encompasses intact polyclonal antibodies, intact monoclonal antibodies, epitope binding antibody fragments (such as Fab, Fab', F(ab')2, and Fv fragments), single

(e.g., growth factor). Non-limiting examples of non-functional antibodies that have indirect cell killing activity include huMov19, huMy9-6, and huB4.

By "huB4" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD19, such as human CD19. An exemplary huB4 antibody of the invention may include the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huB4 LC (SEQ ID NO:1)
EIVLTQSPAIMSASPGERVTMTC**SASSGVNYMH**WYQQKPGTSPRRWIY**DTSKLA**
SGVPARFSGSGSGTDYSLTISSMEPEDAATYYC**HQRGSYT**FGGGTKLEIKRTVAA
PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huB4 HC (SEQ ID NO:2)
QVQLVQPGAEVVKPGASVKLSCKTSGYTFT**SNWMH**WVKQAPGQGLEWIG**EIDP**
SDSYTNYNQNFQGKAKLTVDKSTSTAYMEVSSLRSDDTAVYYCAR***GSNPYYYA***
MDYWGQGTSVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVS
WNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD
KKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSH
EDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSD
IAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPGK

By "huB4-SPDB-DM4" is meant an antibody drug conjugate that includes an huB4 antibody, which specifically binds CD19, conjugated to the cytotoxic maytansinoid, $N^{2'}$-deacetyl-$N^{2'}$-(4-mercapto-4-methyl-1-oxopentyl) maytansine (DM4) via the linker N-succinimidyl 4-(2-pyridyldithio)butanoate (SPDB). huB4-SPDB-DM4 is described, for example, in U.S. Patent No. 8,435,528 and International Pat. Appl. Publication No. WO2004/103272, which are incorporated herein by reference in their entireties.

By "huMov19" (also termed "M9346A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds folate receptor alpha (also known as folate receptor 1 or "FOLR1" herein). Detailed sequences for huMov19 are described in U.S. Patent Nos. 8,557 ,966 and 8,709,432 and International Pat. Appl. Publication Nos.: WO2011/106528, which are incorporated herein by reference in their entireties. Exemplary huMOV19 antibodies of the invention may include the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huMovl9 LC v1.00 (SEQ ID NO:3)
DIVLTQSPLSLAVSLGQPAIISC**KASQSVSFAGTSLMH**WYHQKPGQQPRLLIY**RA**
SNLEAGVPDRFSGSGSKTDFTLNISPVEAEDAATYYC**QQSREYPYT**FGGGTKLEI

KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMovl9 LC v1.60 (SEQ ID NO:4)

DIVLTQSPLSLAVSLGQPAIISC**KASQSVSFAGTSLMH**WYHQKPGQQPRLLIY**RA**
SNLEAGVPDRFSGSGSKTDFTLTISPVEAEDAATYYC**QQSREYPYT**FGGGTKLEI
KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMovl9 HC (SEQ ID NO:5)

QVQLVQSGAEVVKPGASVKISCKASGYTFT**GYFMN**WVKQSPGQSLEWIG**RIHP**
YDGDTFYNQKFQGKATLTVDKSSNTAHMELLSLTSEDFAVYYCTR**YDGSRAM**
DYWGQGTTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDK
KVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE
DPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKC
KVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDI
AVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPG

By "huMov19-sulfo-SPDB-DM4" (also termed "IMGN853") is meant an antibody drug conjugate that comprises an huMov19 antibody, which specifically binds FOLR1, conjugated to the cytotoxic maytansinoid, $N^{2'}$-deacetyl-$N^{2'}$-(4-mercapto-4-methyl-1-oxopentyl) maytansine (DM4) via the disulfide-containing linker N-succinimidyl 4-(2-pyridyldithio)-2-sulfobutanoate (sSPDB). The ADC huMov19-sulfo-SPDB-DM4 is described, for example, by Ab et al., AACR; Cancer Res 2011;71(8 Suppl):Abstract number 4576, and U.S. Patent Nos. 8,557 ,966 and 8,709,432 and International Pat. Appl. Publication Nos.: WO2011/106528 which are each incorporated herein by reference in their entirety.

By "huDS6" is meant a humanized antibody or epitope binding fragment thereof that specifically binds a CA6 sialoglycotope on the Muc1 mucin receptor (e.g., human Muc1) expressed by cancerous cells. Exemplary sequences for huDS6 are described in U.S. Patent No. 7,834,155 and International Pat. Appl. Publication Nos.: WO2005/009369 and WO2007/024222, which are incorporated herein by reference in their entireties. An exemplary huDS6 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences :

huDS6 LC (SEQ ID NO:6)

EIVLTQSPATMSASPGERVTITC**SAHSSVSFMH**WFQQKPGTSPKLWIY**STSSLAS**G
VPARFGGSGSGTSYSLTISSMEAEDAATYYC**QQRSSFPLT**FGAGTKLELKRTVAA

PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huDS6 HC (SEQ ID NO:7)

QAQLVQSGAEVVKPGASVKMSCKASGYTFT**SYNMH**WVKQTPGQGLEWIG**YIY**
PGNGATNYNQKFQGKATLTADTSSSTAYMQISSLTSEDSAVYFCAR**GDSVPFA**
YWGQGTLVTVSAASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKK
VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED
PEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIA
VEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEA
LHNHYTQKSLSLSPGK

By "huMy9-6" (also termed "Z4681A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds leukocyte differentiation antigen CD33, such as human CD33. Exemplary sequences for the huMy9-6 heavy chain variable region portion are described in U.S. Patent Publication No. 20060177455, which is incorporated herein by reference in its entirety. Exemplary sequences for the huMy9-6 light chain variable region portion are known in the art and described in U.S. Patent Nos. 7,557,189, 7,342,110, 8,119,787 and 8,337,855, which are incorporated herein by reference in their entireties. An exemplary huMy9-6 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

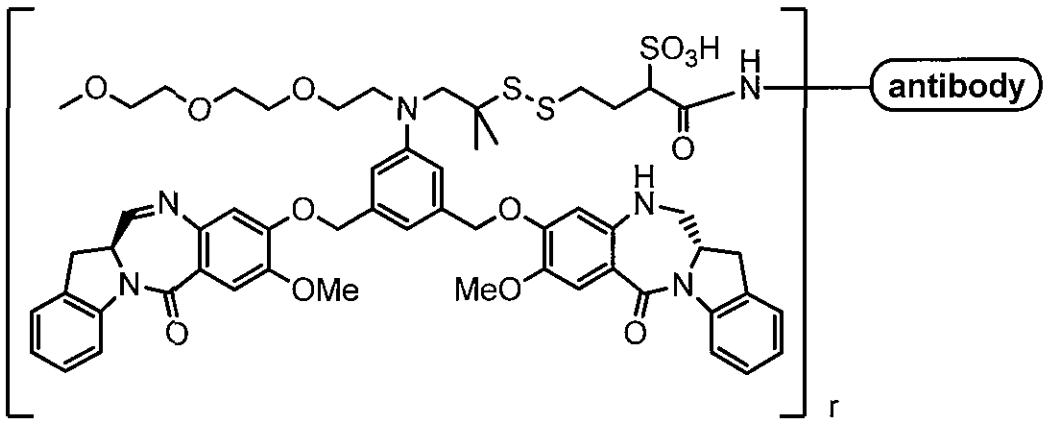
huMy9-6 LC (SEQ ID NO:8)

EIVLTQSPGSLAVSPGERVTMSC**KSSQSVFFSSSQKNYL**AWYQQIPGQSPRLLIY
WASTRESGVPDRFTGSGSGTDFTLTISSVQPEDLAIYYC**HQYLSSRT**FGQGTKLEI
KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQ
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huMy9-6 HC (SEQ ID NO:9)

QVQLQQPGAEVVKPGASVKMSCKASGYTFT**SYYIH**WIKQTPGQGLEWVG**VIYP**
GNDDISYNQKFQGKATLTADKSSTTAYMQLSSLTSEDSAVYYCAR**EVRLRYFD**
VWGQGTTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS
GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKV
EPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDP
EVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKV
SNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAV
EWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEAL
HNHYTQKSLSLSPG

By "huMy9-6-sulfo-SPDB-DGN462" (also termed "IMGN779") is meant an anti-huCD33 antibody conjugated to an indolinobenzodiazepine dimer containing a mono-imine moiety termed DGN462 via a cleavable disulfide linker.



By "huEGFR-7R" (also termed "J2898A") is meant a humanized antibody or epitope binding fragment thereof that specifically binds EGFR, such as human EGFR. An exemplary huEGFR-7R antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huEGFR-7R LC v1.0 (SEQ ID NO:10)
DIQMTQSPSSLSASVGDRVTITC**RASQDINNYLA**WYQHKPGKGPKLLIH**YTSTLH**
PGIPSRFSGSGSGRDYSFSISSLEPEDIATYYC**LQYDNLLYT**FGQGTKLEIKRTVAA
PSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD
SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huEGFR-7R LC v1.01 (SEQ ID NO:11)
DIQMTQSPSSLSASVGDRVTITC**KASQDINNYLA**WYQHKPGKGPKLLIH**YTSTL**
HPGIPSRFSGSGSGRDYSFSISSLEPEDIATYYC**LQYDNLLYT**FGQGTKLEIKRTV
AAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE
QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huEGFR-7R HC (SEQ ID NO:12)
QVQLVQSGAEVAKPGASVKLSCKASGYTF**TSYWMQ**WVKQRPGQGLECIG**TIYP**
GDGDTTYTQKFQGKATLTADKSSSTAYMQLSSLRSEDSAVYYCAR**YDAPGYA**
MDYWGQGTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVS
WNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD
KKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSH
EDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSD
IAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHE
ALHNHYTQKSLSLSPG

By "huEGFR-7R-SMCC-DM1" (also termed "IMGN289") is meant an antibody drug conjugate that comprises an huEGFR-7R antibody, which specifically binds EGFR, conjugated to the maytansinoid N(2')-deacetyl-N(2')-(3-mercapto-1-oxopropyl)-maytansine (DM1) via the linker N-succinimidyl 4-(maleimidomethyl)cyclohexanecarboxylate (SMCC). The ADC huEGFR-7R-SMCC-DM1 is described, for example, in U.S. Patent No. 8,790,649 and International Pat. Appl. Publication No. WO2012/058588, which are incorporated herein by reference in their entireties.

By "huCD37-3" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD37, such as human CD37. Exemplary sequences for huCD37-3 are described in U.S. Patent No. 8,765,917 and International Pat. Appl. Publication No. WO2011/112978, which are incorporated herein by reference in their entireties. An exemplary huCD37-3 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huCD37-3 LC (SEQ ID NO:13)
DIQMTQSPSSLSVSVGERVTITC**RASENIRSNLA**WYQQKPGKSPKLLVN**VATNLA**
DGVPSRFSGSGSGTDYSLKINSLQPEDFGTYYC**QHYWGTTWT**FGQGTKLEIKRT
VAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESV
TEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huCD37-3 HC v1.0 (SEQ ID NO:14)
QVQVQESGPGLVAPSQTLSITCTVSGFSLT**TSGVS**WVRQPPGKGLEWLG**VIWGD**
GSTNYHPSLKSRLSIKKDHSKSQVFLKLNSLTAADTATYYCAK**GGYSLAH**WGQ
GTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALT
SGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKS
CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF
NWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY
TQKSLSLSPG

huCD37-3 HC v1.1 (SEQ ID NO:15)
QVQVQESGPGLVAPSQTLSITCTVSGFSLT**TSGVS**WVRQPPGKGLEWLG**VIWGD**
GSTNYHSSLKSRLSIKKDHSKSQVFLKLNSLTAADTATYYCAK**GGYSLAH**WGQ
GTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALT
SGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKS
CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF
NWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY
TQKSLSLSPG

By "huCD37-3-SMCC-DM1" (also termed "IMGN529") is meant an antibody drug conjugate that comprises a humanized IgG1 antibody K7153A that specifically binds CD37 that is covalently linked via the uncleavable, maleimide-derived thioether-based linker succinimidyl 4-[N-maleimidomethyl]cyclohexane-1-carboxylate (SMCC) to the maytansinoid N(2')-deacetyl-N(2')-(3-mercapto-1-oxopropyl)-maytansine (DM1).

By "huCD37-50" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD37, such as human CD37. Exemplary sequences for huCD37-50 are described in U.S. Patent No. 8,765,917 and International Pat. Appl. Publication No. WO2011/112978, which are incorporated herein by reference in their entireties. An exemplary huCD37-50 antibody of the invention may include or consists of the following CDRs (shown in bold and underline) or the following light chain (LC) and heavy chain (HC) sequences:

huCD37-50 LC (SEQ ID NO:16)
EIVLTQSPATMSASPGERVTMTC**SATSSVTYMH**WYQQKPGQSPKRWIY**DTSNLP**
YGVPARFSGSGSGTSYSLTISSMEAEDAATYYC**QQWSDNPPT**FGQGTKLEIKRT
VAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESV
TEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

huCD37-50 HC (SEQ ID NO:17)
QVQLQESGPGLLKPSQSLSLTCTVSGYSIT**SGFAWH**WIRQHPGNKLEWMG**YILY**
SGSTVYSPSLKSRISITRDTSKNHFFLQLNSVTAADTATYYCAR**GYYGYGAWFA**
YWGQGTLVTVSAASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKK
VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED
PEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIA
VEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEA
LHNHYTQKSLSLSPG

By "huAnti-CD123" is meant a humanized antibody or epitope binding fragment thereof that specifically binds CD123, such as human CD123. Exemplary huAnti-CD123 antibodies are described in U.S. Provisional Appl. Ser. No. 62/186,161, which is incorporated herein by reference in its entirety.

The term "antibody" means an immunoglobulin molecule that recognizes and specifically binds to a target, such as a protein, polypeptide, peptide, carbohydrate, polynucleotide, lipid, or combinations of the foregoing through at least one antigen recognition site within the variable region of the immunoglobulin molecule. As used herein, the term "antibody" encompasses intact polyclonal antibodies, intact monoclonal antibodies, epitope binding antibody fragments (such as Fab, Fab', F(ab')2, and Fv fragments), single