WHAT IS CLAIMED IS:

1. An anti-TPBG antibody, wherein said anti-TPBG antibody comprising Fc silencing mutations, wherein said Fc silencing mutations are leucine (L) to alanine (A) substitution at the positions 234 and 235 (LALA mutations) and
wherein:
(i) said anti-TPBG antibody is an antibody comprising a heavy chain variable region having an amino acid sequence as set forth SEQ ID NO: 3 and a light chain variable region having an amino acid sequence as set forth SEQ ID NO: 4; preferably said anti-TPBG antibody comprising:
a') a light chain comprising SEQ ID NO: 5 and
b') a heavy chain comprising SEQ ID NO: 6;
and
(ii) said anti-TPBG antibody is an antibody comprising:
a'') a heavy chain variable region comprising heavy chain CDR1 having the amino acid sequence as set forth in SEQ ID NO: 7, heavy chain CDR2 having the amino acid sequence as set forth in SEQ ID NO: 8, and heavy chain CDR3 having the amino acid sequence as set forth in SEQ ID NO: 9; and
b'') a light chain variable region comprising light chain CDR1 having the amino acid sequence as set forth in SEQ ID NO: 10, light chain CDR2 having the amino acid sequence as set forth in SEQ ID NO: 11, and light chain CDR3 having the amino acid sequence as set forth in SEQ ID NO: 12.

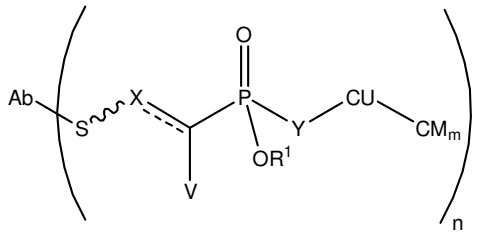
2. The anti-TPBG antibody according to claim 1, wherein said anti-TPBG antibody has one or more of the following characteristics:
a) a chimeric antibody and/or humanized antibody;
b) human IgG antibody, preferably a human IgG1 antibody;
c) comprising kappa (κ) light chain; and/or
d) comprising lambda (λ) light chain.

3. A hybridoma, wherein said hybridoma produces the monoclonal antibody according to any one of the preceding claims.

4. A nucleic acid encoding the antibody according to any one of the preceding claims or an expression vector comprising at least one of said nucleic acid molecules.

5. An isolated host cell comprising the vector and/or nucleic acid according to any one of the preceding claims.

6. An antibody drug conjugate (ADC) comprising the anti-TPBG antibody according to any one of the preceding claims, wherein said ADC having the formula (I):



(I),

or a pharmaceutically acceptable salt or solvate thereof;

wherein:

Ab is an anti-TPBG antibody according to any one of the preceding claims;

 is a double bond; or

 is a bond;

V is absent when  is a double bond; or

V is H or (C_1-C_8)alkyl when  is a bond;

X is  when is a double bond; or

X is  when is a bond;

Y is NR^5, S, O, or CR^6R^7;

R^1 is an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^3 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^4 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^5 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^6 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^7 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

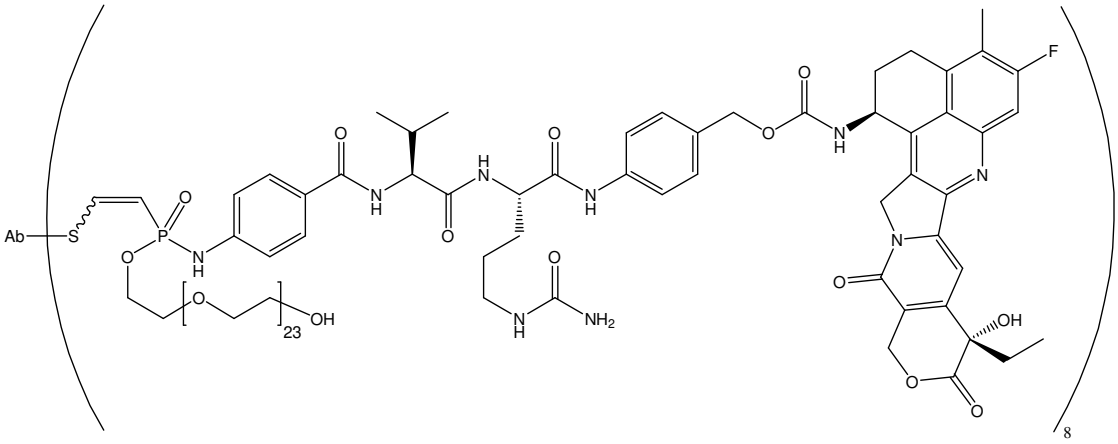
CU is a connector unit;

CM is a cytotoxic moiety;

m is an integer ranging from 1 to 10; and

n is an integer ranging from 1 to 20.

7. The antibody drug conjugate (ADC) according to claim 6 having the following formula (Ia):



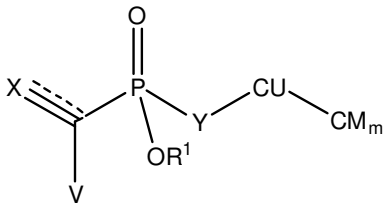
(Ia),

wherein Ab is an anti-TPBG antibody according to any one of the preceding claims.

8. A method of producing an antibody drug conjugate (ADC), said method comprising:
conjugating the antibody according to any one of the preceding claims to one or more cytotoxic moieties, preferably via one or more linkers, further preferably via one or more phosphonamidate linkers;

wherein, said method comprising:

reacting a compound of formula (II)



(II),

or a pharmaceutically acceptable salt or solvate thereof;

wherein:

 is a triple bond; or

 is a double bond;

V is absent when  is a triple bond; or

V is H or (C_1-C_8)alkyl when  is a double bond;

X is  when is a triple bond; or

X is  when is a double bond;

Y is NR^5, S, O, or CR^6R^7;

R^1 is an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^3 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^4 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^5 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^6 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

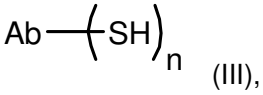
R^7 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

CU is a connector unit;

CM is a cytotoxic moiety; and

m is an integer ranging from 1 to 10;

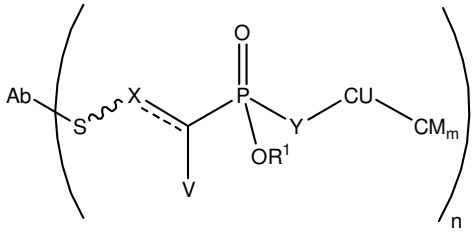
with a thiol-containing molecule of formula (III)



(III),

wherein Ab is an anti-TPBG antibody according to any one of the preceding claims; and n is an integer ranging from 1 to 20;

resulting in an antibody drug conjugate (ADC) of formula (I)



(I),

or a pharmaceutically acceptable salt or solvate thereof;

wherein:

Ab is an anti-TPBG antibody according to any one of the preceding claims;

 is a double bond when  in a compound of formula (II) is a triple bond; or

 is a bond when  in a compound of formula (II) is a double bond;

V is absent when  is a double bond; or

V is H or (C_1-C_8)alkyl when  is a bond;

X is  when is a double bond; or

X is  when is a bond;

Y is NR^5, S, O, or CR^6R^7;

R^1 is an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^3 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^4 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^5 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^6 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

R^7 is H; or an optionally substituted aliphatic residue or an optionally substituted aromatic residue;

CU is a connector unit;

CM is a cytotoxic moiety;

m is an integer ranging from 1 to 10; and

n is an integer ranging from 1 to 20.

9. An antibody drug conjugate (ADC) produced by the method according to any one of the preceding claims.

10. A composition or kit comprising said anti-TPBG, antibody drug conjugate (ADC), hybridoma, nucleic acid, expression vector and/or host cell according to any one of the preceding claims, preferably wherein said composition is a pharmaceutical and/or diagnostic composition.

11. A method for treatment, amelioration, prophylaxis and/or diagnostics of cancer, preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovary cancer, Endometrium cancer, Uterine cervix cancer, Rectum cancer, Colon cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanomas, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Retinoblastom, Thyroid cancer, Fallopian tube cancer; further preferably said cancer is a solid cancer, most preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovarian cancer, Endometrial cancer, Uterus cancer, Cervical cancer, Rectum cancer, Colon cancer, Anal cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanoma cancers, Skin cancers, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Eye cancers,

Neuroendocrine tumors, Cancer of unknown primary (CUP), said method comprising: administering a therapeutically or prophylactically effective amount of the antibody, antibody drug conjugate (ADC), nucleic acid, expression vector, host cell, composition or kit according to any one of the preceding claims.

12. The antibody, antibody drug conjugate (ADC), nucleic acid, expression vector, host cell, composition or kit according to any one of the preceding claims, for use: (a) as a medicament and/or in therapy; and/or (b) in one or more of the following methods:

(i) method for treatment, amelioration, prophylaxis and/or diagnostics of cancer, preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovary cancer, Endometrium cancer, Uterine cervix cancer, Rectum cancer, Colon cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanomas, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Retinoblastom, Thyroid cancer, Fallopian tube cancer; further preferably said cancer is a solid cancer; most preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovarian cancer, Endometrial cancer, Uterus cancer, Cervical cancer, Rectum cancer, Colon cancer, Anal cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanoma cancers, Skin cancers, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Eye cancers, Neuroendocrine tumors, Cancer of unknown primary (CUP);

(ii) method for monitoring development of cancer and/or for assessing the efficacy of cancer therapy;

(iii) method for screening a candidate compound for anti-cancer activity;

(iv) method for altering resistance of cancer cells to chemotherapy;

(v) method for sensitizing cancer cells to chemotherapy;

(vi) method for inhibiting the growth of cancer cell expressing TPBG;

(vii) method for production or preparation of an antibody;

(viii) method for immunizing a non-human animal;

(ix) method for preparation of a hybridoma;

(x) method according to any one of the preceding claims;

(xi) method according to any one of (i)-(x), wherein said method is an *in vivo*, *in vitro*, or

ex vivo method.

13. Use of the antibody, antibody drug conjugate (ADC), nucleic acid, expression vector, host cell, composition or kit according to any one of the preceding claims, for one or more of the following:

(a) for treatment, amelioration, prophylaxis and/or diagnostics of cancer, preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovary cancer, Endometrium cancer, Uterine cervix cancer, Rectum cancer, Colon cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanomas, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Retinoblastom, Thyroid cancer, Fallopian tube cancer; further preferably said cancer is a solid cancer; most preferably said cancer is selected from the group consisting of: Breast cancer, Head and neck cancer, Ovarian cancer, Endometrial cancer, Uterus cancer, Cervical cancer, Rectum cancer, Colon cancer, Anal cancer, Esophagus cancer, Stomach cancer, Lung cancer, Kidney cancer, Adrenal gland cancer, Bladder cancer, Liver cancer, Sarcoma, Brain cancer, Nevi and Melanoma cancers, Skin cancers, Urogenital cancer, Prostate cancer, Vulva Squamous cell carcinoma, Oropharyngeal cancer, Endocrine gland cancer, Thoracic Cancer, Mesothelioma, Pancreas cancer, Cholangiocarcinoma, Blood cancers, Eye cancers, Neuroendocrine tumors, Cancer of unknown primary (CUP);

(b) for monitoring development of cancer and/or for assessing the efficacy of cancer therapy;

(c) for screening a candidate compound for anti-cancer activity;

(d) for altering resistance of cancer cells to chemotherapy;

(e) for sensitizing cancer cells to chemotherapy;

(f) for inhibiting the growth of cancer cell expressing TPBG;

(g) for production or preparation of an antibody;

(h) for immunizing a non-human animal;

(i) for preparation of a hybridoma;

(j) in a method according to any one of the preceding claims;

(k) use according to any one of (a)-(j), wherein said use is an *in vivo*, *in vitro*, or *ex vivo* use.