CLAIMS:

1. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 7 (CDRH1) or conservative amino acid substitutions thereof, SEQ ID NO: 8 (CDRH2) or conservative amino acid substitutions thereof, and SEQ ID NO: 9 (CDRH3) or conservative amino acid substitutions thereof, and CDRL1, CDRL2, and CDRL3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 10 (CDRL1) or conservative amino acid substitutions thereof, SEQ ID NO: 11 (CDRL2) or conservative amino acid substitutions thereof, and SEQ ID NO: 12 (CDRL3) or conservative amino acid substitutions thereof, in the preparation of a medicament for treating cancer by co-administration with

(b) erlotinib.

2. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 7 (CDRH1) or conservative amino acid substitutions thereof, SEQ ID NO: 8 (CDRH2) or conservative amino acid substitutions thereof, and SEQ ID NO: 9 (CDRH3) or conservative amino acid substitutions thereof, and CDRL1, CDRL2, and CDRL3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 10 (CDRL1) or conservative amino acid substitutions thereof, SEQ ID NO: 11 (CDRL2) or conservative amino acid substitutions thereof, and SEQ ID NO: 12 (CDRL3) or conservative amino acid substitutions thereof, in the preparation of a medicament for treating cancer by co-administration with

(b) paclitaxel.

3. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 7 (CDRH1) or conservative amino acid substitutions thereof, SEQ ID NO: 8 (CDRH2) or conservative amino acid substitutions thereof, and SEQ ID NO: 9 (CDRH3) or conservative amino acid substitutions thereof, and CDRL1, CDRL2, and CDRL3 sequences comprising the

amino acid sequences set forth in SEQ ID NO: 10 (CDRL1) or conservative amino acid substitutions thereof, SEQ ID NO: 11 (CDRL2) or conservative amino acid substitutions thereof, and SEQ ID NO: 12 (CDRL3) or conservative amino acid substitutions thereof, in the preparation of a medicament for treating cancer by co-administration with

(b) cisplatin.

4. Use of

(a) an anti-ErbB3 antibody comprising a heavy chain variable region comprising SEQ ID NO:1, or an amino acid sequence at least 90% identical thereto, and a light chain variable region comprising SEQ ID NO:2, or an amino acid sequence at least 90% identical thereto in the preparation of a medicament for treating cancer by co-administration with (b) erlotinib, paclitaxel, or cisplatin.

5. The use of claim 4, wherein the antibody comprises a heavy chain variable region comprising SEQ ID NO:1 and a light chain variable region comprising SEQ ID NO:2.

6. The use of any one of claims 1-5, wherein co-administration of the anti-ErbB3 antibody and erlotinib, paclitaxel, or cisplatin has an additive effect on suppressing tumor growth, compared to administration of the anti-ErbB3 antibody or erlotinib, paclitaxel, or cisplatin alone.

7. The use of any one of claims 1-5, wherein co-administration of the anti-ErbB3 antibody and erlotinib, paclitaxel, or cisplatin has a synergistic effect on suppressing tumor growth, compared to administration of the anti-ErbB3 antibody or erlotinib, paclitaxel, or cisplatin alone.

8. The use of any one of claims 1-5, wherein the medicament is formulated for intravenous administration.

9. The use of any one of claims 1-6, wherein the medicament is for administration at a dosage of 3.2 mg/kg, 6 mg/kg, 10 mg/kg, 15 mg/kg, 20 mg/kg, 25 mg/kg, 30 mg/kg, 35

mg/kg or 40 mg/kg at a dosage schedule of once every three days, once every five days, once every seven days, once every 10 days, once every 14 days, or once every 21 days.

10. The use of claim 1, wherein erlotinib is formulated for oral administration.

11. The use of claim 1, wherein erlotinib is for administration simultaneously with or before or after administration of the medicament.

12. The use of claim 2, wherein paclitaxel is formulated for intravenous administration.

13. The use of claim 2, wherein paclitaxel is for administration simultaneously with or before or after administration of the medicament.

14. The use of claim 3, wherein cisplatin is formulated for intravenous administration.

15. The use of claim 3, wherein cisplatin is for administration simultaneously with or before or after administration of the medicament.

16. The use of any one of claims 1-5, further comprising administration of another additional therapeutic agent.

17. The use of any one of claims 1-5, wherein the cancer is selected from the group consisting of renal carcinoma, prostate cancer, ovarian cancer, melanoma, breast cancer, gastrointestinal/colon cancer, lung cancer, clear cell sarcoma, squamous cell cancer, small-cell lung cancer, non-small cell lung cancer, gastric cancer, pancreatic cancer, glial cell tumors, cervical cancer, liver cancer, bladder cancer, hepatoma, colon cancer, colorectal cancer, endometrial carcinoma, salivary gland carcinoma, kidney cancer, prostate cancer, vulval cancer, thyroid cancer, hepatic carcinoma and head and neck cancer.

18. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 7 (CDRH1) or conservative amino acid substitutions thereof, SEQ ID NO: 8 (CDRH2) or conservative amino acid substitutions thereof, and SEQ ID NO: 9 (CDRH3) or conservative amino acid substitutions thereof, and CDRL1, CDRL2, and CDRL3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 10 (CDRL1) or conservative amino acid substitutions thereof, SEQ ID NO: 11 (CDRL2) or conservative amino acid substitutions thereof, and SEQ ID NO: 12 (CDRL3) or conservative amino acid substitutions thereof, in the preparation of a medicament for treating cancer by co-administration with

(b) erlotinib, paclitaxel, or cisplatin, and

wherein the cancer comprises cells comprising a KRAS mutation.

19. The use of claim 18, wherein the KRAS mutation is a G12S KRAS mutation.

20. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 7 (CDRH1) or conservative amino acid substitutions thereof, SEQ ID NO: 8 (CDRH2) or conservative amino acid substitutions thereof, and SEQ ID NO: 9 (CDRH3) or conservative amino acid substitutions thereof, and CDRL1, CDRL2, and CDRL3 sequences comprising the amino acid sequences set forth in SEQ ID NO: 10 (CDRL1) or conservative amino acid substitutions thereof, SEQ ID NO: 11 (CDRL2) or conservative amino acid substitutions thereof, and SEQ ID NO: 12 (CDRL3) or conservative amino acid substitutions thereof, in the preparation of a medicament for treating cancer by co-administration with

(b) erlotinib, paclitaxel, or cisplatin, and

wherein the cancer comprises cells comprising a PI3K (phosphatidylinositol 3-kinase) mutation.

21. The use of any one of claims 18-20, wherein the antibody comprises a heavy chain variable region comprising SEQ ID NO:1 and a light chain variable region comprising SEQ ID NO:2.

22. A kit for treating a cancer in a human patient, the kit comprising:

(a) one or more doses of an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 sequences comprising the amino acid sequences set forth, respectively, in SEQ ID NO: 7 (CDRH1), SEQ ID NO: 8 (CDRH2), and SEQ ID NO: 9 (CDRH3), and CDRL1, CDRL2, and CDRL3 sequences comprising the amino acid sequences set forth, respectively, in SEQ ID NO: 10 (CDRL1), SEQ ID NO: 11, (CDRL2) and SEQ ID NO: 12 (CDRL3),

(b) instructions for use in combination with erlotinib, paclitaxel, cisplatin, or combinations thereof,

and

(c) instructions for use in treating a cancer comprising cells comprising a KRAS mutation

or

(d) instructions for use in treating a cancer comprising cells comprising a PI3K mutation.

23. Use of

(a) an anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NOs: 63 and 76 (CDRH1), SEQ ID NO: 64 (CDRH2), and SEQ ID NO: 65 (CDRH3), and CDRL1, CDRL2, and CDRL3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NOs: 69 and 77 (CDRL1), SEQ ID NO: 70 (CDRL2), and SEQ ID NOs: 71 and 80 (CDRL3) in the preparation of a medicament for treating cancer by co-administration with

(b) erlotinib, paclitaxel, or cisplatin.

24. Use of

(a) an isolated monoclonal antibody, or antigen binding portion thereof, which binds an epitope of human ErbB3 comprising residues 92-104 and 129 of SEQ ID NO: 73 in the preparation of a medicament for treating cancer by co-administration with

(b) erlotinib, paclitaxel, or cisplatin.

25. The use of any one of claims 1-4, 11-15, 18-21, and 23-24, wherein the antibody binds ErbB3 with a KD of 50 nM or less, as measured by a surface plasmon resonance assay or a cell binding assay.

26. An anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NOs: 63 and 76 (CDRH1), SEQ ID NO: 64 (CDRH2), and SEQ ID NO: 65 (CDRH3), and CDRL1, CDRL2, and CDRL3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NOs: 69 and 77 (CDRL1), SEQ ID NO: 70 (CDRL2), and SEQ ID NOs: 71 and 80 (CDRL3), with the proviso that the antibody is not an antibody comprising V_H CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 7, 8 and 9, respectively, and V_L CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 10, 11 and 12, respectively.

27. An isolated monoclonal antibody, or antigen binding portion thereof, which binds an epitope of human ErbB3 comprising residues 92-104 and 129 of SEQ ID NO: 73, with the proviso that the antibody is not an antibody comprising V_H CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 7, 8 and 9, respectively, and V_L CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 10, 11 and 12, respectively.

CLAIMS

1. An anti-ErbB3 antibody comprising CDRH1, CDRH2, and CDRH3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NO: 63 or SEQ ID NO: 76 (CDRH1), SEQ ID NO: 64 (CDRH2), and SEQ ID NO: 65 (CDRH3), and CDRL1, CDRL2, and CDRL3 paratope sequences comprising the amino acid sequences set forth in SEQ ID NO: 69 or SEQ ID NO: 77 (CDRL1), SEQ ID NO: 70 (CDRL2), and SEQ ID NO: 71 or SEQ ID NO: 80 (CDRL3), with the proviso that the antibody is not an antibody comprising V_H CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 7, 8 and 9, respectively, and V_L CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 10, 11 and 12, respectively.

2. An isolated monoclonal antibody, or antigen binding portion thereof, which binds an epitope of human ErbB3 comprising residues 92-104 and 129 of SEQ ID NO: 73, with the proviso that the antibody is not an antibody comprising V_H CDR1, CDR2 and CDR3 sequences as shown in SEQ ID NOs: 7, 8 and 9, respectively, and V_L CDR1, CDR2 and CDR3 sequences as shown in SEQ ID Nos: 10, 11 and 12, respectively.

3. Use of an anti-ErbB3 antibody as defined in claim 1 or an isolated monoclonal antibody or antigen binding portion thereof as defined in claim 2 in the preparation of a medicament for the treatment of a cancer.

4. The isolated monoclonal antibody, or antigen binding portion thereof, of claim 2, wherein the antibody inhibits proliferation of cancer cells expressing ErbB3.

5. The isolated monoclonal antibody, or antigen binding portion thereof, of claim 2, wherein the epitope further comprises residue 129 of SEQ ID NO: 73.

6. The isolated monoclonal, antibody or antigen binding portion thereof, of claim 4, wherein the cancer cells are MALME-3M cells, AdrR cells, or ACHN cells and the proliferation is reduced by at least 10% relative to control.

7. The isolated monoclonal antibody, or antigen binding portion thereof, of any one of claims 1, 2 or 4 to 6, wherein, when any one amino acid residue of human ErbB3 selected from residue 93 (asparagine), residue 101 (methionine), residue 102 (leucine) and residue 104 (tyrosine) of SEQ ID NO: 73 is replaced by an alanine to generate a mutant ErbB3 with a single amino acid substitution, there is a substantial reduction in binding, such as at least a ten-fold

change in KD value of binding, of the antibody, or antigen binding portion thereof, to the mutant ErbB3 as compared to binding of the antibody, or antigen binding portion thereof, to human ErbB3 comprising the amino acid sequence of SEQ ID NO: 73.

8. The antibody, or antigen binding portion thereof, of any one of claims 1, 2 or 4 to 7, wherein: (a) the antibody is a human antibody, a humanized antibody, a bispecific antibody, or a chimeric antibody; (b) the antigen binding portion is a portion of a human antibody, a humanized antibody, or a chimeric antibody; (c) the antibody, or antigen binding portion thereof, is a Fab, Fab '2, scFv, SMIP, or a domain antibody; or (d) the antibody is of an isotype selected from the group consisting of an IgGl, an IgG2, an IgG3, an IgG4, an IgM, an IgAl, an IgA2, an IgAsec, an IgD, and an IgE.

9. The antibody, or antigen binding portion thereof, of any one of claims 1, 2 or 4 to 8, wherein the antibody is capable of inhibiting growth of tumor cells that comprise either or both of a KRAS mutation or a P13K mutation.

10. The antibody, or antigen binding portion thereof, of claim 9, wherein the antibody is capable of inhibiting growth of KRAS mutant A549 cells and/or PI3K mutant SKOV3 cells in vivo.

11. A composition comprising the antibody, or antigen binding portion thereof, of any one of claims 1, 2 or 4 to 10 in a pharmaceutically acceptable carrier.

12. A first agent that is the antibody, or antigen binding portion thereof, of any one of claims 1, 2 or 4 to 10 or the composition of claim 11, for use in a method of treating a cancer in a subject, wherein the agent is for administering to the subject.

13. The first agent of claim 12, wherein a sample of cells obtained from the cancer comprises either or both of a KRAS mutation or a PI3K mutation.

14. The first agent of claim 13, wherein said subject is human and: (i) the KRAS mutation comprises a mutation of codon 12 or codon 13 of a human KRAS gene; or (ii) the P13K mutation comprises a mutation within exon 9 or exon 20 of a human PIK3CA gene.

15. The first agent of claim 12, wherein the first agent is for adminsteringin combination with a therapeutically effective amount of a second agent, which is an anti-cancer agent other than the first agent.

16. The first agent of claim 15, wherein the second agent: (a) comprises an antibody, or antigen binding portion thereof; (b) is a protein synthesis inhibitor, a somatostatin analogue, an immunotherapeutic agent, or an enzyme inhibitor; (c) is a small molecule targeting IGFIR, a small molecule targeting EGFR, a small molecule targeting ErbB2, a small molecule targeting cMET, an antimetabolite, an alkylating agent, a topoisornerase inhibitor, a microtubule targeting agent, a kinase inhibitor, a hormonal therapy, a glucocorticoid, an aromatase inhibitor, an mTOR inhibitor, a chemotherapeutic agent, a protein kinase B inhibitor, a phosphatidylinositol 3-kinase inhibitor, a cyclin dependent kinase inhibitor, or an MEK inhibitor.

17. The first agent of claim 16, wherein: (a) the antibody comprised by the second agent is panitumumab, trastuzumab or cetuximab; (b) the microtubule targeting agent is paclitaxel; (c) the alkylating agent is cisplatin; or (d) the small molecule targeting EGFR is erlotinib or lapatinib.

18. Use according to claim 3, wherein a sample of cells from said cancer comprise either or both of a KRAS mutation or PI3K mutation.

19. Use according to claim 18, wherein the medicament is for treatment of cancer in a human and (i) said KRAS mutation comprises a mutation of codon 12 or codon 13 of a human KRAS gene; or (ii) said PI3K mutation comprises a mutation within exon 9 or exon 20 of a human PIK3CA gene.

20. Use according to claim 3, wherein the medicament is for administering in combination with a therapeutically effective amount of a second agent, which is an anti-cancer agent other than a component of the medicament specified in claim 3.

21. Use according to claim 20, wherein the second agent (a) comprises an antibody, or antigen binding portion thereof; (b) is a protein synthesis inhibitor, a somatostatin analogue, an immunotherapeutic agent, or an enzyme inhibitor; (c) is a small molecule targeting IGFIR, a small molecule targeting EGFR, a small molecule targeting ErbB2, a small molecule targeting cMET, an antimetabolite, an alkylating agent, a topoisornerase inhibitor, a microtubule targeting agent, a kinase inhibitor, a hormonal therapy, a glucocorticoid, an aromatase inhibitor, an mTOR inhibitor, a chemotherapeutic agent, a protein kinase B inhibitor, a phosphatidylinositol 3-kinase inhibitor, a cyclin dependent kinase inhibitor, or an MEK inhibitor.

22. Use according to claim 21, wherein: (a) the antibody comprised by the second agent is panitumumab, trastuzumab or cetuximab; (b) the microtubule targeting agent is paclitaxel; (c) the alkylating agent is cisplatin; or (d) the small molecule targeting EGFR is erlotinib or lapatinib.