I CLAIM:

1. An isolated antibody that specifically binds to the extracellular domain of human TGFβ receptor II (TGFβRII) with a K_D of less than 100 pM at room temperature (20-25°C).

2. The antibody of claim 1 that blocks binding of human TGFβ1, TGFβ2, or TGFβ3 to human TGFβRII with an IC_{50} of less than 1.0 nM as determined by ELISA.

3. The antibody of either claim 1 or claim 2 that inhibits TGFβ-induced Smad2 phosphorylation with an IC_{50} of less than 30 nM.

4. The antibody of any one of claims 1-3, that specifically binds to human TGFβRII comprising:

   i) a CDRH1 having the sequence GGSISNSYF (SEQ ID NO: 1), a CDRH2 having the sequence SFYYGEKTYYNPSLKS (SEQ ID NO: 2), a CDRH3 having the sequence GPTMIRGVIDS (SEQ ID NO: 3), a CDRL1 having the sequence RASQSVRSYLA (SEQ ID NO: 10), a CDRL2 having the sequence DASNRAT (SEQ ID NO: 11), and a CDRL3 having the sequence QQRSNWPPT (SEQ ID NO: 12);

   ii) a CDRH1 having the sequence GSGYRFTSY (SEQ ID NO: 4), a CDRH2 having the sequence IIYPGDSDTRYSPSFQG (SEQ ID NO: 5), a CDRH3 having the sequence HGRGYNGYEG (SEQ ID NO: 6), a CDRL1 having the sequence RASQGISSWLA (SEQ ID NO: 13), a CDRL2 having the sequence AASSLQS (SEQ ID NO: 14), and a CDRL3 having the sequence QQYNSYPWT (SEQ ID NO: 15); or,

   iii) a CDRH1 having the sequence GGSISSSSY (SEQ ID NO: 7), a CDRH2 having the sequence SFYYSGITYYSPSLKS (SEQ ID NO: 8), a CDRH3 having the sequence GFTMIRGALDY (SEQ ID NO: 9), a CDRL1 having the sequence RASQSVRSFLA (SEQ ID

NO: 16), a CDRL2 having the sequence DASNRAT (SEQ ID NO: 11), and a CDRL3 having the sequence QQRSNWPPT (SEQ ID NO: 12).

5. The antibody of any one of claims 1-4, comprising:

i) a HCVR amino acid sequence:
QLQVQESGPGLVKPSETLSLTCTVSGGSISNSYFSWGWIRQP
PGKGLEWIGSFYYGEKTYYNPSLKSRATISIDTSKSQFSLKLS
SVTAADTAVYYCPRGPTMIRGVIDSWGQGTLVTVSS (SEQ ID NO: 25) and
a LCVR amino acid sequence:
EIVLTQSPATLSLSPGERATLSCRASQSVRSYLAWYQQKPG
QAPRLLIYDASNRATGIPARFSGSGSGTDFTLTISSLEPEDFA
VYYCQQRSNWPPTFGQGTKVEIK (SEQ ID NO: 27);

ii) a HCVR amino acid sequence:
QVQLVQSGAAVKKPGESLKISCKGSGYRFTSYWIGWVRQM
PGKGLEWMGIIYPGDSDTRYSPSFQGQVTISAGKSISTAYLQ
WSSLKASDTAMYYCARHGRGYNGYEGAFDIWGQGTMVT
VSS (SEQ ID NO: 29) and
a LCVR amino acid sequence:
DIQMTQSPSSLSASVGDRVTITCRASQGISSWLAWYQQKPE
KAPKSLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFA
TYYCQQYNSYPWTFGQGTKVEIK (SEQ ID NO: 31); or

iii) a HCVR amino acid sequence:
QLQLQESGPGLVKPSETLSLTCTVSGGSISSSSYSWGWIRQP
PGKGLEWIGSFYYSGITYYSPSLKSRIIISEDTSKNQFSLKLSS
VTAADTAVYYCASGFTMIRGALDYWGQGTLVTVSS (SEQ ID NO: 33), and
a LCVR amino acid sequence:
EIVLTQSPATLSLSPGERATLSCRASQSVRSFLAWYQQKPGQ
APRLLIYDASNRATGIPARFSGSGSGTDFTLTISSLEPEDFAV
YYCQQRSNWPPTFGQGTKVEIK(SEQ ID NO: 35).

6. The antibody of claim 5, comprising:

i) a heavy chain of SEQ ID NO: 37 and a light chain of SEQ ID NO: 39;

ii) a heavy chain of SEQ ID NO: 41 and a light chain of SEQ ID NO: 43; or

iii) a heavy chain of SEQ ID NO: 45 and a light chain of SEQ ID NO: 47.

7. The antibody of claim 5, comprising:

i) a HCVR amino acid sequence: QLQVQESGPGLVKPSETLSLTCTVSGGSISNSYFSWGWIRQP PGKGLEWIGSFYYGEKTYYNPSLKSRATISIDTSKSQFSLKLS SVTAADTAVYYCPRGPTMIRGVIDSWGQGTLVTVSS (SEQ ID NO: 25) and

ii) a LCVR amino acid sequence: EIVLTQSPATLSLSPGERATLSCRASQSVRSYLAWYQQKPG QAPRLLIYDASNRATGIPARFSGSGSGTDFTLTISSLEPEDFA VYYCQQRSNWPPTFGQGTKVEIK (SEQ ID NO: 27).

8. The antibody of claim 7 comprising two heavy chains of SEQ ID NO: 37 and two light chains of SEQ ID NO: 39.

9. A human TGFβRII-binding fragment of the antibody of any of claims 1-8.

10. An isolated antibody or a functional fragment thereof, wherein said antibody competes for binding to the extracellular domain of TGFβRII in a competition ELISA assay with a competing antibody according to any one of claims 4 to 9, wherein said competing antibody binds TGFβRII with a K_D of less than 100 pM at room temperature (20-25°C).

11. The isolated antibody of claim 10, wherein said antibody blocks binding of human TGFβ1, TGFβ2, or TGFβ3 to human TGFβRII with an IC_{50} of less than 1.0 nM as determined by ELISA.

12. A pharmaceutical composition comprising an antibody or fragment of any one of claims 1-11 and a pharmaceutically acceptable carrier, diluent, or excipient.

13. A product containing an antibody or fragment, as claimed in any one of claims 1-11, and an additional anti-cancer agent for treatment in combination for simultaneous, separate or sequential use in therapy.

14. An antibody or fragment of any one of claims 1-11 for use as a medicament.

15. An antibody or fragment of any one of claims 1-11 for use in the treatment of cancer.

16. An antibody or fragment as claimed in claim 15 wherein the cancer is breast, lung or pancreatic.

17. An antibody or fragment as claimed in claim 16 together with an anti-cancer agent.

18. The antibody of claim 17, wherein the anti-cancer agent is cyclophospharnide.

I CLAIM:

1. An antibody or a human TGFβRII-binding fragment thereof, that specifically binds to human TGFβRII comprising:

a CDRH1 having the sequence GGSISNSYF (SEQ ID NO: 1);

a CDRH2 having the sequence SFYYGEKTYYNPSLKS (SEQ ID NO: 2);

a CDRH3 having the sequence GPTMIRGVIDS (SEQ ID NO: 3);

a CDRL1 having the sequence RASQSVRSYLA (SEQ ID NO: 10);

a CDRL2 having the sequence DASNRAT (SEQ ID NO: 11); and

a CDRL3 having the sequence QQRSNWPPT (SEQ ID NO: 12).

2. The antibody of claim 1, comprising:

a HCVR amino acid sequence

QLQVQESGPGLVKPSETLSLTCTVSGGSISNSYFSWGWIRQPPGKGLEWIGSF YYGEKTYYNPSLKSRATISIDTSKSQFSLKLSSVTAADTAVYYCPRGPTMIRG VIDSWGQGTLVTVSS (SEQ ID NO: 25); and

a LCVR amino acid sequence

EIVLTQSPATLSLSPGERATLSCRASQSVRSYLAWYQQKPGQAPRLLIYDASN RATGIPARFSGSGSGTDFTLTISSLEPEDFAVYYCQQRSNWPPTFGQGTKVEIK (SEQ ID NO: 27).

3. The antibody of claim 2, comprising a heavy chain of SEQ ID NO: 37.

4. The antibody of claim 2, comprising a heavy chain and a light chain, wherein said heavy chain is SEQ ID NO: 37, and said light chain consists of a LCVR amino acid sequence

EIVLTQSPATLSLSPGERATLSCRASQSVRSYLAWYQQKPGQAPRLLIYDASN RATGIPARFSGSGSGTDFTLTISSLEPEDFAVYYCQQRSNWPPTFGQGTKVEIK (SEQ ID NO: 27),

and a light chain constant region.

5. The antibody of claim 2 comprising two heavy chains and two light chains, wherein said heavy chains are the amino acid sequence of SEQ ID NO: 37, and said light chains consist of two LCVR amino acid sequences of:

EIVLTQSPATLSLSPGERATLSCRASQSVRSYLAWYQQKPGQAPRLLIYDASN
RATGIPARFSGSGSGTDFTLTISSLEPEDFAVYYCQQRSNWPPTFGQGTKVEIK
(SEQ ID NO: 27),

and two light chain constant regions.

6. The antibody of any of claims 1 to 5 that specifically binds to the extracellular domain of human TGFβ receptor II (TGFβRII) with a K_D of 10-80 pM.

7. The antibody of any of claims 1 to 5 that inhibits TGFβ-induced Smad2 phosphorylation with an IC_{50} of 4.5-25.5 nM.

8. The antibody of any one of claims 1 to 7, wherein said antibody blocks binding of human TGFβI, TGFβ2 or TGFβ3 to human TGFβRII with an IC_{50} of less than 1.0 nM, as determined by ELISA.

9. A pharmaceutical composition comprising an antibody or fragment of any one of claims 1-8 and a pharmaceutically acceptable carrier, diluent, or excipient.

10. A product containing an antibody or fragment of any one of claims 1-9, and an additional anti-cancer agent for treatment in combination for simultaneous, separate or sequential use in therapy.

11. The use of an antibody or fragment of any one of claims 1-10 in the manufacture of a medicament for the treatment of cancer, wherein the cancer is breast, pancreatic, or lung cancer.