Patent Claims

1. Antibody binding to human EPO receptor, characterized in specifically binding EPO receptor fragment ~~TPPHLKYLYLVVSD (SEQ ID NO:25) comprising a phospho-tyrosyl residue at position 430, GLSDGPYSNPYENSLIP (SEQ ID NO:26) comprising a phospho-tyrosyl residue at position 461, or~~ GLSDGPYSNPYENSLIP (SEQ ID NO:26) comprising a phospho-tyrosyl residue at position 465~~,~~,

whereby the antibody specifically binds to activated human EPO receptor and discriminates between non activated and activated EPO-R, the heavy chain variable domain comprises a CDR3 region of SEQ ID NO:17, a CDR2 region of SEQ ID NO:18 and a CDR1 region of SEQ ID NO:19 and the light chain variable domain comprises a CDR3 region of SEQ ID NO:20, a CDR2 region of SEQ ID NO:21 and a CDR1 region of SEQ ID NO: 22, and

whereby the antibody is specifically binding pY465 in ELISA at a S/N ratio of 10 or more at an antibody concentration of 0.1µg/ml.

~~2. Antibody according to claim 1, characterized in comprising as heavy chain variable domain CDR3 region a CDR3 region of SEQ ID NO: 1, 9 or 17.~~

~~3. Antibody according to claim 1, characterized in that the heavy chain variable domain comprises CDR3 region of SEQ ID NO: 1, a CDR2 region of SEQ ID NO:2 and a CDR1 region of SEQ ID NO:3 or a CDR3 region of SEQ ID NO:9, a CDR2 region of SEQ ID NO:10 and a CDR1 region of SEQ ID NO:11 or a CDR3 region of SEQ ID NO:17, a CDR2 region of SEQ ID NO:18 and a CDR1 region of SEQ ID NO:19.~~

42. Antibody according to claim 1 ~~or 2~~, characterized in ~~that the heavy chain variable domain comprises SEQ ID NO:7 and the light chain variable domain comprises SEQ ID NO:8 or that the heavy chain variable domain comprises SEQ ID NO:15 and the light chain variable domain comprises SEQ ID NO:16 or~~ that the heavy chain variable domain comprises SEQ ID NO:23 and the light chain variable domain comprises SEQ ID NO:24.

~~5. Nucleic acid encoding a heavy chain of an antibody according to claim 3, said heavy chain being characterized in comprising a CDR3 region of SEQ ID NO: 1, a CDR2 region of SEQ ID NO:2 and a CDR1 region of SEQ ID NO:3 or a CDR3 region of SEQ ID NO:9, a CDR2 region of SEQ ID NO:10 and a CDR1 region of SEQ ID~~

NO:11 or a CDR3 region of SEQ ID NO:17, a CDR2 region of SEQ ID NO:18 and a CDR1 region of SEQ ID NO:19.

6. Nucleic acid encoding a heavy chain of an antibody according to claim4, said heavy chain being characterized in comprising as variable domain SEQ ID NO:7, SEQ ID NO:15 or SEQ ID NO:19.

7. Method for the manufacture of a diagnostic kit comprising an antibody according to claims 1 to 4.

~~8. Expression vector characterized in comprising a nucleic acid according to claims 5 or 6.~~

~~9. Prokaryotic or eukaryotic host cell characterized in comprising a vector according to claim 8.~~

~~10. Method for the production of a recombinant human or humanized antibody according claims 3 or 4, characterized by expressing a nucleic acid according claims 5 or 6 in a prokaryotic or eukaryotic host cell and recovering said antibody from said cell or the cell culture supernatant.~~

~~11~~3. Use of an antibody according to claims 1 to ~~4~~2 for the *in vitro* determination of activated EPO receptor in human cells tissues, and biopsies.

~~12~~4. Use according to claim ~~11~~3, characterized in that the ~~sample~~ human cells tissue is a lysate of human tissue.

~~13~~5. Use according to claim ~~12~~4, characterized in that the determination is performed by Western Blot or ELISA

~~14. Antibody according to claims 1 to 4 for use in the determination of activated EPO receptor in human cells tissues, and biopsies.~~