Claims:

1. Antibody Mat3 or antigen-binding fragments thereof which antagonize prolactin receptor-mediated signalling, whereby the antibody comprises a variable heavy region corresponding with a nucleic acid sequence according to SEQ ID NO: 3, and an amino acid sequence according to SEQ ID NO: 1, and a variable light region with a nucleic acid sequence according to SEQ ID NO: 4, and an amino acid sequence according to SEQ ID NO: 2.

2. Antibody Mat3 or antigen-binding fragment thereof according to claim 1 comprising the CDRs of the antibody of claim 1, whereby
   the variable heavy chain contains the CDR sequences corresponding to SEQ ID NO: 5, 6 and 7 and the variable light chain contains the CDR sequences corresponding to SEQ ID NO: 8, 9, and 10.

3. Antibody according to claim 1 to 2, whereby the antibody consists of an antigen-binding region that binds specifically to one or more regions of the extracellular domain of PRLR from human, monkey and mouse, and whereby the amino acid sequences of the human PRLR are depicted by the amino acid sequences from position 1 to 210 of SEQ ID NO: 12 and human polymorphic variants of SEQ ID NO: 12, by the amino acid sequences from position 1 to 210 of the monkey PRLR according to SEQ ID NO: 11 and of the mouse PRLR according to SEQ ID NO: 13.

4. Antibody according to claim 3, whereby the affinity to the extracellular domain of PRLR from human, monkey and mouse is at least 100 nM, preferably less than about 100 nM, more preferably less than about 30 nM, even more preferred with an affinity of less than about 10 nM.

5. Antibody according to claim 1 to 2, whereby the antibody consists of an antigen-binding region that binds specifically to one or more regions of the extracellular domain of human PRLR and whereby the affinity is at least 10 nM, more preferable less than about 1nM.

6. Antibody of claim 1 to 5 wherein the heavy chain constant domains determine a modified or unmodified IgG1, IgG2, IgG3 or IgG4.

7. An isolated nucleic acid sequence encoding an antibody or antigen-binding fragment according to any of the claims 1 to 6.

8. An isolated nucleic acid sequence according to claim 7, whereby the nucleic acid sequences are corresponding to Seq ID NO: 3 and 4. .

9. Expression vector comprising a nucleic acid sequence of claim 7 or 8.

10. Host cell comprising the vector of claim 9 or a nucleic acid molecule of claim 7 or 8, whereby the host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, and may be a prokaryotic cell, such as a bacterial cell.

11. A method of using the host cell of claim 10 to produce an antibody or antigen-binding fragment, comprising culturing the host cell of claim 10 under suitable conditions and recovering said antibody.

12. An antibody or antigen-binding fragment produced by the method of claim 11.

13. An antibody or antigen-binding fragment of any of claims 1 to 6 that is purified to at least 95% homogeneity by weight.

14. An antibody or antigen-binding fragment according to claims 1 to 6 as a medicament.

15. A pharmaceutical composition comprising the antibody or antigen-binding fragment according to claim 1 to 6 and a pharmaceutically acceptable carrier comprising excipients and auxiliaries.

16. Kits comprising an antibody of claim 1 to 6 comprising a therapeutically effective amount of antibody Mat3, packaged in a container, said kit optionally containing a second therapeutic agent, and further comprising a label attached to or

packaged with the container, the label describing the contents of the container and providing indications and/or instructions regarding the use of the contents of the container to treat endometriosis, adenomyosis, benign breast disease and mastalgia, lactation inhibition, hyper- and normoprolactinemic hair loss, benign prostate hyperplasia, fibroids or for use in non-hormonal female contraception or to treat women under combined hormone therapy (i.e. estrogen plus progestin therapy) to inhibit mammary epithelial cell proliferation or for treatment and prevention of antiestrogen-resistant breast cancer.

17. Antibody or antigen-binding fragment according to claim 1 to 6 for use in a method of treatment and/or prevention of endometriosis and adenomyosis (endometriosis interna).

18. Use of an antibody or antigen-binding fragment according to any of claims 1 to 6 for manufacture of a medicament for female contraception.

19. Antibody or antigen-binding fragment according to claim 1 to 6 for use in a method of treatment of benign breast disease and mastalgia.

20. Antibody or antigen-binding fragment according to claim 1 to 6 for manufacture of a medicament for lactation inhibition.

21. Antibody or antigen-binding fragment according to claim 1 to 6 for use in a method of treatment of benign prostate hyperplasia.

22. Antibody or antigen-binding fragment according to claim 1 to 6 for use in a method of treatment of hyper- and normoprolactinemic hair loss.

23. Use of an antibody or antigen-binding fragment according to any of claims 1 to 6 for manufacture of a medicament for treatment of women receiving combined hormone therapy.

24. Use according to claim 23, whereby the combined hormone therapy is an estrogen plus progestin therapy.

25. Antibody or antigen-binding fragment according to claim 1 to 6 for use in a method of treatment or prevention of antiestrogen-resistant breast cancer.

26. Pharmaceutical composition accords to claim 15 comprising PRLR antibodies or antigen-binding fragment according to claim 1 to 6, in combination with at least one other agent.

Claims:

1. Antibody Mat3 or antigen-binding fragments thereof which antagonize prolactin receptor-mediated signaling, whereby the antibody comprises a variable heavy region with an amino acid sequence according to SEQ ID NO: 1, and a variable light region an amino acid sequence according to SEQ ID NO: 2.

2. Antibody or antigen-binding fragments thereof according to claim 1 to 2, whereby the antibody consists of an antigen-binding region that binds specifically to one or more regions of the extracellular domain of PRLR from human, monkey and mouse, and whereby the amino acid sequences of the human PRLR are depicted by the amino acid sequences from position 1 to 210 of SEQ ID NO: 12 and human polymorphic variants of SEQ ID NO: 12, by the amino acid sequences from position 1 to 210 of the monkey PRLR according to SEQ ID NO: 11 and of the mouse PRLR according to SEQ ID NO: 13.

3. Antibody or antigen-binding fragments thereof according to claim 2, whereby the affinity to the extracellular domain of PRLR from human, monkey and mouse is from 100 nM to 0.1 nM.

4. Antibody or antigen-binding fragments thereof according to claim 3, whereby the affinity is 0.1 nM.

5. Antibody or antigen-binding fragments thereof according to claim 1 to 2, whereby the antibody consists of an antigen-binding region that binds specifically to one or more regions of the extracellular domain of human PRLR and whereby the affinity is from 10 nM to 0.1nM.

6. Antibody or antigen-binding fragments thereof according to any of claims 1 to 5 wherein the heavy chain constant domains is a modified or unmodified IgG1, IgG2, IgG3 or IgG4.

7. An isolated nucleic acid sequence encoding an antibody or antigen-binding fragment according to any of the claims 1 to 6.

8. An isolated nucleic acid sequence according to claim 7, whereby the isolated nucleic acid sequences are according to SEQ ID NO: 3 and 4.

9. Expression vector comprising a nucleic acid sequence of claim 7 or 8.

10. Host cell comprising the vector of claim 9 or a nucleic acid molecule of claim 7 or 8, whereby the host cell is a higher eukaryotic host cell, a lower eukaryotic host cell, or a prokaryotic cell.

11. Host cell of claim 10, whereby the higher eukaryotic host cell is a mammalian cell.

12. Host cell of claim 10, whereby the lower eukaryotic host cell is a yeast cell.

13. Host cell of claim 10, whereby the prokaryotic cell is a bacterial cell.

14. A method of using the host cell of any of claims 10 to 13 to produce an antibody or antigen-binding fragment, comprising culturing the host cell of claim 10 under suitable conditions and recovering said antibody.

15. An antibody or antigen-binding fragment produced by the method of claim 14.

16. An antibody or antigen-binding fragment of any of claims 1 to 6 that is purified to at least 95% homogeneity by weight.

17. An antibody or antigen-binding fragment according to claims 1 to 6 as a medicament.

18. A pharmaceutical composition comprising the antibody or antigen-binding fragment according to any of claims 1 to 6 and a pharmaceutically acceptable carrier comprising excipients and auxiliaries.

19. Kits comprising an antibody of claim 1 to 6 comprising a therapeutically effective amount of antibody Mat3, packaged in a container, said kit optionally containing a second therapeutic agent, and further comprising a label attached to or packaged with the container, the label describing the contents of the container and providing indications and/or instructions regarding the use of the contents of the container to treat endometriosis, adenomyosis, benign breast disease and mastalgia, lactation inhibition, hyper- and normoprolactinemic hair loss, benign prostate hyperplasia, fibroids or for use in non-hormonal female contraception or to treat women under combined hormone therapy (i.e. estrogen plus progestin therapy) to inhibit mammary epithelial cell proliferation or for treatment and prevention of antiestrogen-resistant breast cancer.

20. Antibody or antigen-binding fragment according to any of claims 1 to 6 for use in a method of treatment and/or prevention of endometriosis and adenomyosis (endometriosis interna).

21. Antibody or antigen-binding fragment according to any of claims 1 to 6 for use in a method of treatment of benign breast disease and mastalgia.

22. Antibody or antigen-binding fragment according to any of claims 1 to 6 for use in a method of treatment or prevention of antiestrogen-resistant breast cancer.

23. Pharmaceutical composition according to claim 18 comprising PRLR antibodies or antigen-binding fragment according to any of claims 1 to 6, in combination with at least one other agent.