

CLAIMS

1. An antibody molecule which specifically binds to human CD47 (Cluster of
Differentiation 47) and cynomolgus monkey CD47, and optionally also binds to mouse CD47,
or an antigen-binding portion thereof, in which the antibody molecule or antigen-binding
5 portion comprises:

(a) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
MGDINPVNGDTNYSFQ (SEQ ID NO: 44) (HCDR2), GGYTPDY (SEQ ID NO:
45) (HCDR3), RSSQSLHLSNGYNYLH (SEQ ID NO: 46) (LCDR1), KGSNRFS (SEQ
ID NO: 47) (LCDR2) and SQNLHVPRT (SEQ ID NO: 48) (LCDR3) [Clone D-H3]; or

10 (b) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1),
MGIINPVDGDTNYPFQ (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO:
51) (HCDR3), RSSQSLHLSNGYTYLH (SEQ ID NO: 52) (LCDR1), KVSNRLS (SEQ
ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5]; or

15 (c) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
IGDINPVNGDTNFSFQ (SEQ ID NO: 55) (HCDR2), GGYTMDK (SEQ ID NO:
56) (HCDR3), RSSQSLVHSNGYTYLH (SEQ ID NO: 57) (LCDR1), KGSYRAS
(SEQ ID NO: 58) (LCDR2) and SQNTQTPRT (SEQ ID NO: 59) (LCDR3) [Clone G-
B6]; or

20 (d) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
MGIINPVNGDTNYPFQ (SEQ ID NO: 60) (HCDR2), GGYTMGK (SEQ ID NO:
61) (HCDR3), RSSQSLVHSNGNTYLD (SEQ ID NO: 62) (LCDR1), KGSYRFS (SEQ
ID NO: 63) (LCDR2) and SQATHTPRT (SEQ ID NO: 64) (LCDR3) [Clone F-E7]; or

25 (e) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
MGIINPVDGDTRYSPFQ (SEQ ID NO: 65) (HCDR2), GGFTMDY (SEQ ID NO:
66) (HCDR3), RSSQSLHLSNGYNYLH (SEQ ID NO: 46) (LCDR1), KGSNRAS
(SEQ ID NO: 67) (LCDR2) and SQNTHTPRT (SEQ ID NO: 68) (LCDR3) [Clone VH-
A1/VL-B1]; or

30 (f) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1),
MGIINPVDGDTNYPFQ (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO:
51) (HCDR3), RSSQSLHLSNGYNYLH (SEQ ID NO: 46) (LCDR1), KVSNRLS (SEQ

ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.4];
or

(g) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
MGIINPVDGDTRYSPSFQG (SEQ ID NO: 65) (HCDR2), GGYTMDR (SEQ ID NO:
5 51) (HCDR3), RSSQSLHLSAGYNYLH (SEQ ID NO: 82) (LCDR1), KVS NRLS (SEQ
ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.16].

2. An antibody molecule or antigen-binding portion according to Claim 1, comprising:

(a) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1),
MGIINPVDGDTNYPSPFQG (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO:
10 51) (HCDR3), RSSQSLHLSNGYTYLH (SEQ ID NO: 52) (LCDR1), KVS NRLS (SEQ
ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5]; or

(b) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
MGIINPVDGDTRYSPSFQG (SEQ ID NO: 65) (HCDR2), GGYTMDR (SEQ ID NO:
15 51) (HCDR3), RSSQSLHLSAGYNYLH (SEQ ID NO: 82) (LCDR1), KVS NRLS (SEQ
ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.16].

3. An antibody molecule or antigen-binding portion according to Claim 1 or 2, which is
human, humanized or chimeric.

4. An antibody molecule or antigen-binding portion according to Claim 1, 2 or 3,
comprising one or more human variable domain framework scaffolds into which the CDRs
20 have been inserted.

5. An antibody molecule or antigen-binding portion according to any preceding claim,
comprising an IGHV5-51 human germline scaffold into which the corresponding HCDR
sequences have been inserted.

6. An antibody molecule or antigen-binding portion according to any preceding claim,
25 comprising an IGKV2-28 human germline scaffold into which the corresponding LCDR
sequences have been inserted.

7. An antibody molecule or antigen-binding portion according to any preceding claim,
comprising an immunologically inert constant region.

8. An antibody molecule or antigen-binding portion according to any preceding claim, which is a Fab fragment, a F(ab)₂ fragment, an Fv fragment, a tetrameric antibody, a tetravalent antibody, a multispecific antibody (for example, a bivalent antibody), a single domain antibody (for example, V_HH or V_{NAR}, or a fragment of either), a monoclonal antibody or a fusion protein.
9. An immunoconjugate comprising an antibody molecule or antigen-binding portion thereof according to any preceding claim linked to a therapeutic agent.
10. A nucleic acid molecule encoding an antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8.
11. A vector comprising a nucleic acid molecule according to Claim 10.
12. A host cell comprising a nucleic acid molecule according to Claim 10 or a vector according to Claim 11.
13. A pharmaceutical composition comprising an antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8, an immunoconjugate according to Claim 9, a nucleic acid molecule according to Claim 10 or a vector according to Claim 11.
14. An antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8, an immunoconjugate according to Claim 9, a nucleic acid molecule according to Claim 10, a vector according to Claim 11 or a pharmaceutical composition according to Claim 13, for use in the treatment of cancer.
15. An antibody molecule or antigen-binding portion thereof, an immunoconjugate, a nucleic acid molecule, a vector or a pharmaceutical composition for use according to Claim 14, in which the antibody, antigen-binding portion thereof, immunoconjugate, nucleic acid, vector or pharmaceutical composition is for separate, sequential or simultaneous use in a combination combined with a second therapeutic agent, for example an anti-cancer agent.
16. Use of an antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8, an immunoconjugate according to Claim 9, a nucleic acid molecule according to Claim 10, a vector according to Claim 11 or a pharmaceutical composition according to Claim 13, in the manufacture of a medicament for the treatment of cancer.

CLAIMS

1. An antibody molecule which specifically binds to human CD47 (Cluster of Differentiation 47) and cynomolgus monkey CD47, and optionally also binds to mouse CD47, or an antigen-binding portion thereof, in which the antibody molecule or antigen-binding
 5 portion comprises:

(a) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1), MGDINPVNGDTNYSFQ (SEQ ID NO: 44) (HCDR2), GGYTPDY (SEQ ID NO: 45) (HCDR3), RSSQSLHLSNGYNYLH (SEQ ID NO: 46) (LCDR1), KGSNRFS (SEQ ID NO: 47) (LCDR2) and SQNLHVPRT (SEQ ID NO: 48) (LCDR3) [Clone D-H3]; or

10 (b) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1), MGIINPVDGDTNYPFQ (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO: 51) (HCDR3), RSSQSLHLSNGYTYLH (SEQ ID NO: 52) (LCDR1), KVSNRLS (SEQ ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5]; or

15 (c) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1), IGDINPVNGDTNFSFQ (SEQ ID NO: 55) (HCDR2), GGYTMDK (SEQ ID NO: 56) (HCDR3), RSSQSLVHSNGYTYLH (SEQ ID NO: 57) (LCDR1), KGSYRAS (SEQ ID NO: 58) (LCDR2) and SQNTQTPRT (SEQ ID NO: 59) (LCDR3) [Clone G-B6]; or

20 (d) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1), MGIINPVNGDTNYPFQ (SEQ ID NO: 60) (HCDR2), GGYTMGK (SEQ ID NO: 61) (HCDR3), RSSQSLVHSNGNTYLD (SEQ ID NO: 62) (LCDR1), KGSYRFS (SEQ ID NO: 63) (LCDR2) and SQATHTPRT (SEQ ID NO: 64) (LCDR3) [Clone F-E7]; or

25 (e) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1), MGIINPVDGDTRYSPFQ (SEQ ID NO: 65) (HCDR2), GGFTMDY (SEQ ID NO: 66) (HCDR3), RSSQSLHLSNGYNYLH (SEQ ID NO: 46) (LCDR1), KGSNRAS (SEQ ID NO: 67) (LCDR2) and SQNTHTPRT (SEQ ID NO: 68) (LCDR3) [Clone VH-A1/VL-B1]; or

(f) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1), MGIINPVDGDTNYPFQ (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO:

51) (HCDR3), RSSQSLLHSNGYNYLH (SEQ ID NO: 46) (LCDR1), KVS NRLS (SEQ ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.4];
or

(g) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
5 MGIINPVDGDTRYSPSFQG (SEQ ID NO: 65) (HCDR2), GGYTMDR (SEQ ID NO: 51) (HCDR3), RSSQSLLHSAGYNYLH (SEQ ID NO: 82) (LCDR1), KVS NRLS (SEQ ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.16].

2. An antibody molecule or antigen-binding portion according to Claim 1, comprising:

(a) the amino acid sequences GYTFTNYYIF (SEQ ID NO: 49) (HCDR1),
10 MGIINPVDGDTNYPNPSFQG (SEQ ID NO: 50) (HCDR2), GGYTMDR (SEQ ID NO: 51) (HCDR3), RSSQSLLHSNGYTYLH (SEQ ID NO: 52) (LCDR1), KVS NRLS (SEQ ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5]; or

(b) the amino acid sequences GYSFTNYYIF (SEQ ID NO: 43) (HCDR1),
15 MGIINPVDGDTRYSPSFQG (SEQ ID NO: 65) (HCDR2), GGYTMDR (SEQ ID NO: 51) (HCDR3), RSSQSLLHSAGYNYLH (SEQ ID NO: 82) (LCDR1), KVS NRLS (SEQ ID NO: 53) (LCDR2) and FQNTHTPRT (SEQ ID NO: 54) (LCDR3) [Clone A-D5.16].

3. An antibody molecule or antigen-binding portion according to Claim 1 or 2, which is humanized or chimeric.

4. An antibody molecule or antigen-binding portion according to Claim 1, 2 or 3,
20 comprising one or more human variable domain framework scaffolds into which the CDRs have been inserted.

5. An antibody molecule or antigen-binding portion according to any preceding claim, comprising an IGHV5-51 human germline scaffold into which the corresponding HCDR sequences have been inserted.

25 6. An antibody molecule or antigen-binding portion according to any preceding claim, comprising an IGKV2-28 human germline scaffold into which the corresponding LCDR sequences have been inserted.

7. An antibody molecule or antigen-binding portion according to any preceding claim, comprising an immunologically inert constant region.
8. An antibody molecule or antigen-binding portion according to any preceding claim, which is a Fab fragment, a F(ab)₂ fragment, an Fv fragment, a tetrameric antibody, a
- 5 tetraivalent antibody, a multispecific antibody (for example, a bivalent antibody), a single domain antibody (for example, V_{HH} or V_{NAR}, or a fragment of either), a monoclonal antibody or a fusion protein.
9. An immunoconjugate comprising an antibody molecule or antigen-binding portion thereof according to any preceding claim linked to a therapeutic agent.
- 10 10. A nucleic acid molecule encoding an antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8.
11. A vector comprising a nucleic acid molecule according to Claim 10.
12. A host cell comprising a nucleic acid molecule according to Claim 10 or a vector according to Claim 11.
- 15 13. A pharmaceutical composition comprising an antibody molecule or antigen-binding portion thereof according to any of Claims 1 to 8, an immunoconjugate according to Claim 9, a nucleic acid molecule according to Claim 10 or a vector according to Claim 11.