CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9. In some examples, methods of reducing the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a subject are provided. In some examples, a method comprises administering an effective amount of an antibody that binds colony stimulating factor 1 receptor (CSF1R) to the subject, wherein the antibody blocks binding of colony stimulating factor 1 (CSF1) to CSF1R and blocks binding of IL-34 to CSF1R. In some examples, the subject has an inflammatory condition. In some examples, the subject has a condition selected from rheumatoid arthritis, juvenile idiopathic arthritis, Castleman's disease, psoriasis, psoriatic arthritis, ankylosing spondylitis, Crohn's disease, ulcerative colitis, lupus erythematosus, inflammatory bowel disease, inflammatory arthritis, and CD16+ disorders.In one example, the present disclosure describes use of an antibody that binds colony stimulating factor 1 receptor (CSF1R) in the manufacture of a medicament for reducing the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a subject with neoplasia, comprising an effective amount of the antibody that binds colony stimulating factor 1 receptor (CSF1R) to be administered to the subject, wherein the antibody blocks binding of colony stimulating factor 1 (CSF1) to CSF1R and blocks binding of IL-34 to CSF1R. In another example, the present disclosure describes use of an antibody that binds CSF1R in the manufacture of a medicament for treating a neoplasia associated with an elevated level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 comprising an effective amount of the antibody that binds CSF1R to be administered to a subject with the neoplasia, wherein the antibody blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R, wherein the antibody reduces the level of at least one of the factors. In one example, the present disclosure provides a method of identifying a neoplasia subject who may benefit from an antibody that binds CSF1R, wherein the antibody blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R, comprising determining the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from the subject, wherein elevated level of at least one of the factors in the subject indicates that the subject may benefit from the antibody that binds CSF1R. In yet another example, the disclosure describes a method of predicting responsiveness in a subject suffering from neoplasia to an antibody that binds CSF1R, wherein the antibody blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R, comprising determining the level of at least one, at least two, at least three, or at least four, at least

five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from the subject, wherein elevated level of at least one of the factors in the subject indicates that the subject is more likely to respond to the antibody that binds CSF1R. In a further example, the present disclosure describes use of an antibody that binds CSF1R and blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R in the manufacture of a medicament for treating neoplasia, the use comprising (a) determining the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from a subject with the inflammatory condition; and (b) if the level of at least one of the factors is elevated in the subject, an effective amount of the antibody that binds CSF1R and blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R to be administered to the subject, wherein the antibody reduces the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9. In a further example, the present disclosure describes use of an antibody that binds CSF1R and blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R in the manufacture of a medicament for treating neoplasia, the use comprising (a) detecting an elevated level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from a subject with the inflammatory condition; and (b) an effective amount of the antibody that binds CSF1R and blocks binding of CSF1 to CSF1R and blocks binding of IL-34 to CSF1R to be administered to the subject, wherein the antibody reduces the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9. In one example, the present disclosure provides use of an antibody that binds human colony stimulating factor 1 receptor (CSF1R) in the manufacture of a medicament for reducing the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a subject with neoplasia, comprising an amount of the antibody that binds human colony stimulating factor 1 receptor (CSF1R) to be administered to the subject that is effective to reduce the level of at least one of the said factors in the subject, wherein the antibody blocks binding of human colony stimulating factor 1 (CSF1) to human CSF1R and blocks binding of human IL-34 to human CSF1R, wherein the antibody is selected from: a) an antibody comprising

a heavy chain comprising the sequence of SEQ ID NO: 39 and a light chain comprising the sequence of SEQ ID NO: 46; b) an antibody comprising a heavy chain comprising a heavy chain (HC) CDR1 having the sequence of SEQ ID NO: 15, an HC CDR2 having the sequence of SEQ ID NO: 16, and an HC CDR3 having the sequence of SEQ ID NO: 17, and a light chain comprising a light chain (LC) CDR1 having the sequence of SEQ ID NO: 18, a LC CDR2 having the sequence of SEQ ID NO: 19, and a LC CDR3 having the sequence of SEQ ID NO: 20; and c) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 53 and a light chain comprising the sequence of SEQ ID NO: 60. In one example, the present disclosure provides use of an antibody that binds human CSF1R in the manufacture of a medicament for treating a neoplasia associated with an elevated level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 comprising an amount of the antibody that binds human CSF1R to be administered to a subject with the neoplasia that is effective to reduce the level of at least one of the said factors, wherein the antibody blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R, wherein the antibody is selected from: a) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 39 and a light chain comprising the sequence of SEQ ID NO: 46; b) an antibody comprising a heavy chain comprising a heavy chain (HC) CDR1 having the sequence of SEQ ID NO: 15, an HC CDR2 having the sequence of SEQ ID NO: 16, and an HC CDR3 having the sequence of SEQ ID NO: 17, and a light chain comprising a light chain (LC) CDR1 having the sequence of SEQ ID NO: 18, a LC CDR2 having the sequence of SEQ ID NO: 19, and a LC CDR3 having the sequence of SEQ ID NO: 20; and c) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 53 and a light chain comprising the sequence of SEQ ID NO: 60. In one aspect, the present invention refers to use of an antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R in the manufacture of a medicament for treating neoplasia, the use comprising: (a) determining the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from a subject with the neoplasia; and (b) if the level of at least one of the factors is elevated in the subject, an amount of the antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R to be administered to the subject, wherein the amount is effective to reduce the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9; wherein the antibody is selected from: a) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 39 and a

CLAIMS

1. Use of an antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R in the manufacture of a medicament for treating neoplasia, the use comprising:

(a) determining the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from a subject with the neoplasia; and

(b) if the level of at least one of the factors is elevated in the subject, an amount of the antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R to be administered to the subject, wherein the amount is effective to reduce the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9; wherein the antibody is selected from:

a) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 39 and a light chain comprising the sequence of SEQ ID NO: 46;

b) an antibody comprising a heavy chain comprising a heavy chain (HC) CDR1 having the sequence of SEQ ID NO: 15, an HC CDR2 having the sequence of SEQ ID NO: 16, and an HC CDR3 having the sequence of SEQ ID NO: 17, and a light chain comprising a light chain (LC) CDR1 having the sequence of SEQ ID NO: 18, a LC CDR2 having the sequence of SEQ ID NO: 19, and a LC CDR3 having the sequence of SEQ ID NO: 20; and

c) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 53 and a light chain comprising the sequence of SEQ ID NO: 60.

2. Use of an antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R in the manufacture of a medicament for treating neoplasia, the use comprising:

(a) detecting an elevated level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9 in a sample obtained from a subject with the neoplasia; and

(b) an amount of the antibody that binds human CSF1R and blocks binding of human CSF1 to human CSF1R and blocks binding of human IL-34 to human CSF1R to be administered to the subject, wherein the amount is effective to reduce the level of at least one, at least two, at least three, or at least four, at least five, at least six, at least seven, at least eight, at least nine, or at least ten factors selected from IL-6, IL-1β, IL-8, CCL2, CXCL10, TNF-α, CCL7, CXCL5, CXCL9, CXCL6, MMP-7, MMP-2, and MMP-9; wherein the antibody is selected from:

a) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 39 and a light chain comprising the sequence of SEQ ID NO: 46;

b) an antibody comprising a heavy chain comprising a heavy chain (HC) CDR1 having the sequence of

SEQ ID NO: 15, an HC CDR2 having the sequence of SEQ ID NO: 16, and an HC CDR3 having the sequence of SEQ ID NO: 17, and a light chain comprising a light chain (LC) CDR1 having the sequence of SEQ ID NO: 18, a LC CDR2 having the sequence of SEQ ID NO: 19, and a LC CDR3 having the sequence of SEQ ID NO: 20; and

c) an antibody comprising a heavy chain comprising the sequence of SEQ ID NO: 53 and a light chain comprising the sequence of SEQ ID NO: 60.

3. The use of claim 1 or 2, wherein the antibody is a humanized antibody.

4. The use of claim 1 or 2, wherein the antibody is selected from a Fab, an Fv, an scFv, a Fab', and a $(Fab')_2$.

5. The use of any one of the preceding claims, wherein the effective amount is 1.0 to 10.0 mg/Kg.

6. The use of any one of the preceding claims, wherein the antibody comprises a heavy chain comprising the sequence of SEQ ID NO: 53 and a light chain comprising the sequence of SEQ ID NO: 60.

7. The use of any one of the preceding claims, wherein the antibody comprises a heavy chain comprising a heavy chain (HC) CDR1 having the sequence of SEQ ID NO: 15, an HC CDR2 having the sequence of SEQ ID NO: 16, and an HC CDR3 having the sequence of SEQ ID NO: 17, and a light chain comprising a light chain (LC) CDR1 having the sequence of SEQ ID NO: 18, a LC CDR2 having the sequence of SEQ ID NO: 19, and a LC CDR3 having the sequence of SEQ ID NO: 20, and wherein the antibody is an IgG4 antibody comprising an S241P substitution in at least one heavy chain.

8. The use of any one of the preceding claims, wherein the antibody comprises a heavy chain comprising the sequence of SEQ ID NO: 39 and a light chain comprising the sequence of SEQ ID NO: 46, and wherein the antibody is an IgG4 antibody comprising an S241P substitution in at least one heavy chain.

9. The use of any one of the preceding claims, wherein the neoplasia is associated with an elevated level of at least one, at least two, at least three, or four factors selected from IL-6, IL-1β, TNF-α, and CXCL10.

10. The use of claim 9, wherein the neoplasia is associated with an elevated level of IL-6.