

CLAIMS

WHAT IS CLAIMED IS:

1. A recombinant antibody that specifically binds Leukemia Inhibitory Factor (LIF) for use in treating a cancer, wherein the recombinant antibody comprises:
 - a) an immunoglobulin heavy chain complementarity determining region 1 (VH-CDR1) comprising an amino acid sequence set forth in SEQ ID NO: 2 (GFTFSHAW);
 - b) an immunoglobulin heavy chain complementarity determining region 2 (VH-CDR2) comprising an amino acid sequence set forth in SEQ ID NO: 5 (IKAKSDDYAT);
 - c) an immunoglobulin heavy chain complementarity determining region 3 (VH-CDR3) comprising an amino acid sequence set forth in SEQ ID NO: 6 (TCWEWDLDF);
 - d) an immunoglobulin light chain complementarity determining region 1 (VL-CDR1) comprising an amino acid sequence set forth in SEQ ID NO: 10 (QSLLDSDGHTY);
 - e) an immunoglobulin light chain complementarity determining region 2 (VL-CDR2) comprising an amino acid sequence set forth in SEQ ID NO: 12 (SVS); and
 - f) an immunoglobulin light chain complementarity determining region 3 (VL-CDR3) comprising an amino acid sequence set forth in SEQ ID NO: 13 (MQATHAPPYT);wherein the recombinant antibody is to be administered to an individual at a dose of about 1500 milligrams.
2. The antibody for use of claim 1, wherein the recombinant antibody is humanized.
3. The antibody for use of claim 1 or claim 2, wherein the recombinant antibody comprises two immunoglobulin heavy chains and two immunoglobulin light chains.
4. The antibody for use of claim 3, wherein the recombinant antibody is an IgG antibody.
5. The antibody for use of claim 1 or claim 2, wherein the recombinant antibody is a Fab, F(ab)₂, or a single chain variable fragment (scFv).
6. The antibody for use of any one of claims 1 to 5, wherein the recombinant antibody specifically binds LIF with a dissociation constant (K_D) of less than about 200 picomolar, preferably less than about 100 picomolar.
7. The antibody for use of any one of claims 1 to 6, wherein the VH-CDR1 comprises an amino acid sequence set forth in SEQ ID NO: 1 (GFTFSHAWMH), wherein the VH-CDR2 comprises an amino acid sequence set forth in SEQ ID NO: 4 (QIKAKSDDYATYYAESVKG), wherein the VH-CDR3 comprises an amino acid sequence set forth in SEQ ID NO: 6 (TCWEWDLDF), wherein the VL-CDR1 comprises an amino acid sequence set forth in SEQ ID NO: 9 (RSSQSLLDSDGHTYLN), wherein the VL-CDR2 comprises an amino acid

sequence set forth in SEQ ID NO: 11 (SVSNLES), and wherein the VL-CDR3 comprises an amino acid sequence set forth in SEQ ID NO: 13 (MQATHAPPYT).

8. The antibody for use in any one of claims 1-7, wherein the recombinant antibody comprises a VH sequence at least 90% identical to the amino acid sequence set forth in SEQ ID NO: 42; and wherein the recombinant antibody comprises a VL sequence at least 90% identical to the amino acid sequence set forth in SEQ ID NO: 46.

9. The antibody for use in claim 8, wherein the VH sequence is identical to the amino acid sequence set forth in SEQ ID NO: 42; and the VL sequence is identical to the amino acid sequence set forth in SEQ ID NO: 46.

10. The antibody use of any one of claims 1 to 9, wherein the cancer is an advanced solid tumor, glioblastoma, stomach cancer, skin cancer, prostate cancer, pancreatic cancer, breast cancer, testicular cancer, thyroid cancer, head and neck cancer, liver cancer, kidney cancer, esophageal cancer, ovarian cancer, colon cancer, lung cancer, lymphoma, or soft tissue cancer.

11. The antibody for use of claim 10, wherein the cancer is non-small cell lung cancer, epithelial ovarian carcinoma, or pancreatic adenocarcinoma.

12. The antibody for use of any one of claims 1 to 11, wherein the recombinant antibody is to be administered as a component of a pharmaceutical formulation, wherein the pharmaceutical formulation comprising the recombinant antibody and a pharmaceutically acceptable excipient, carrier, or diluent.

13. The antibody for use of claim 12, wherein the pharmaceutical formulation has a pH of about 6.0 and comprises about 25mM histidine, about 6% sucrose, and about 0.01% polysorbate 80, and wherein the recombinant antibody is included at a concentration of about 20 mg/mL.

14. The antibody for use of any one of claims 1 to 13, wherein the recombinant antibody is to be administered intravenously about once a week, about once every two weeks, or about once every three weeks.

15. The antibody for use of claim 14, wherein the recombinant antibody is to be administered about once every three weeks.