

CLAIMS

1. A CD19 antibody or antigen-binding fragment thereof comprising:
 - (a) a heavy chain variable region comprising complementarity determining region (CDR) sequences of SYGMH (SEQ ID NO: 1) (HCDR1), LIWYDGSNKYYADSVKG (SEQ ID NO: 2) (HCDR2) and PVEGLLRGFDY (SEQ ID NO: 3) (HCDR3); and
 - (b) a light chain variable region comprising complementarity determining region (CDR) sequences of :
 - i. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQAGAVPIT (SEQ ID NO: 12) (LCDR3); or
 - ii. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQVDSLHPFT (SEQ ID NO: 13) (LCDR3); or
 - iii. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQAGGVPLT (SEQ ID NO: 14) (LCDR3); or
 - iv. RASQSVRSSSYLA (SEQ ID NO: 8) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQLFDSPYT (SEQ ID NO: 15) (LCDR3); or
 - v. RASQSVRSSSYLA (SEQ ID NO: 8) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQAGVPPLT (SEQ ID NO: 16) (LCDR3); or
 - vi. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASSRAT (SEQ ID NO: 9) (LCDR2), and QQAGGVPPFT (SEQ ID NO: 17) (LCDR3); or
 - vii. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASNRAT (SEQ ID NO: 10) (LCDR2), and QQAGVFPFT (SEQ ID NO: 18) (LCDR3); or
 - viii. RASQSVSSSYLA (SEQ ID NO: 7) (LCDR1), GASRRAT (SEQ ID NO: 11) (LCDR2), and QQAGIPPYT (SEQ ID NO: 19) (LCDR3).
- 2.. The CD19 antibody or antigen-binding fragment thereof of claim 1, comprising
an immunoglobulin light chain variable (V_L) region comprising an amino acid sequence that is at least 90% identical to SEQ ID NO: 20-27; and
an immunoglobulin heavy chain variable (V_H) region comprising an amino acid sequence that is at least 90% identical to SEQ ID NO: 5.
3. The CD19 antibody or antigen-binding fragment thereof of claim 1 or 2, wherein the V_L region comprises an amino acid sequence that is at least 95% identical to SEQ ID

NOs: 20-27, optionally wherein the amino acid sequence that is identical to one of SEQ ID NOs: 20-27.

4. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the V_H region comprises an amino acid sequence that is at least 95% identical to SEQ ID NO: 5, optionally wherein the amino acid sequence is identical to SEQ ID NO: 5.
5. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the V_L region comprises an amino acid sequence that is identical to one of SEQ ID NOs: 20-27 and the V_H region is identical to SEQ ID NO: 5.
6. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the CD19 antibody or antigen-binding fragment thereof is selected from the group consisting of an IgA antibody, IgG antibody, IgE antibody, IgM antibody, bi- or multi-specific antibody, Fab fragment, Fab' fragment, F(ab')₂ fragment, Fd' fragment, Fd fragment, single-chain variable fragment (scFv), polypeptide-Fc fusion, masked antibody, and TCR-like antibody.
7. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the CD19 antibody or antigen-binding fragment thereof is
 - (i) a monoclonal antibody; or
 - (ii) an antibody comprising an IgG constant region .
8. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the CD19 antibody or antigen-binding fragment thereof is a single-chain variable fragment (scFv), optionally wherein the scFv comprises a linker sequence of SEQ ID NOs: 36-39, optionally wherein the scFv comprises a signal peptide selected from SEQ ID NOs: 40 or 41.
9. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims, wherein the CD19 antibody or antigen-binding fragment thereof binds CD19

- (i) with a K_D between 8 nanomolar (nM) and 242 nM, between 5 nM and 30 nM, between 5 nM and 25 nM, or between 8 nM and 20 nM as measured by surface plasmon resonance; and/or
 - (ii) with an EC_{50} between 0.1 nM and 2.7 nM as measured by surface plasmon resonance.
- 10. The CD19 antibody or antigen-binding fragment thereof of any one of the preceding claims for use in treating a B cell disorder in a subject, wherein the B cell disorder is a B-cell malignancy or autoimmune disease.
- 11. The CD19 antibody or antigen-binding fragment thereof for use according to claim 10, wherein the B cell malignancy is selected from the group consisting of leukemia, lymphoma, and myeloma.
- 12. A pharmaceutical composition comprising the CD19 antibody or antigen-binding fragment thereof of anyone of claims 1-9 and a pharmaceutically acceptable carrier.
- 13. A nucleic acid encoding an amino acid sequence of the CD19 antibody or antigen-binding fragment thereof of claim 1.
- 14. A vector comprising the nucleic acid of claim 13.
- 15. An isolated cell comprising the vector of claim 14.