

Claims:

1. An isolated anti-Factor XI (FXI) antibody or a fragment thereof which specifically binds to the catalytic domain of FXI, wherein said antibody or fragment comprises (i) a light chain variable region (VL) comprising complementarity determining regions LCDR1, LCDR2, and LCDR3 of SEQ ID NO: 39, and (ii) a heavy chain variable region (VH) comprising complementarity determining regions HCDR1, HCDR2, and HCDR3 of SEQ ID NO: 29.
2. The isolated antibody or fragment of claim 1, wherein the VH comprising an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 29 and the VL comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO: 39.
3. The isolated antibody or fragment of claim 1, wherein the antibody or fragment comprises a VH comprising the amino acid sequence of SEQ ID NO: 29 and a VL comprising the amino acid sequence of SEQ ID NO: 39.
4. The isolated antibody or fragment of claim 1, wherein the VH comprises the amino acid sequence of SEQ ID NO: 9 and the VL comprises the amino acid sequence of SEQ ID NO: 19.
5. The isolated antibody or fragment of claim 1, wherein the the HCDR1 comprises the amino acid sequence of SEQ ID NO: 46; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 4; the HCDR3 comprises the amino acid sequence of SEQ ID NO: 5; the LCDR1 comprises the amino acid sequence of SEQ ID NO: 33; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 14; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 15.
6. The isolated antibody or fragment of claim 1, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 23; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 24; The HCDR3 comprises the amino acid sequence of SEQ ID NO: 25; the LCDR1 comprises the amino acid sequence of SEQ ID NO: 33; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 34; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 35.

7. The isolated antibody or fragment of claim 1, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 26; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 27; the HCDR3 comprises the amino acid sequence of SEQ ID NO: 28; the LCDR1 comprises the amino acid sequence of SEQ ID NO: 36; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 37; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 38.

8. The isolated antibody or fragment of claim 1, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 43; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 44; the HCDR3 comprises the amino acid sequence of SEQ ID NO: 45; the LCDR1 comprises the amino acid sequence of SEQ ID NO: 47; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 37; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 15.

9. An isolated anti-FXI antibody or a fragment thereof which specifically binds to the catalytic domain of FXI, wherein the antibody comprises a heavy chain comprising the amino acid sequence of SEQ ID NO: 31 and a light chain comprising the amino acid sequence of SEQ ID NO: 41.

10. The isolated antibody or fragment of claim 1, wherein the antibody comprises a heavy chain comprising the amino acid sequence of SEQ ID NO: 11 and a light chain comprising the amino acid sequence of SEQ ID NO: 21.

11. The antibody or fragment of claim 1, which is a human monoclonal antibody.

12. The antibody or fragment of claim 1, which is a single chain antibody, Fab fragments, Fv fragment, F(ab')₂ fragment, or scFv fragment.

13. The antibody or fragment of claim 1, which is a human IgG1 isotype.

14. A pharmaceutical composition comprising an antibody or fragment thereof of claim 1 and a pharmaceutically acceptable carrier.

15. A pharmaceutical composition comprising the antibody or fragment thereof of claim 3 and a pharmaceutically acceptable carrier.

16. A pharmaceutical composition comprising the antibody or fragment thereof of claim 9 and a pharmaceutically acceptable carrier.

17. The antibody or fragment of any one of claims 1 to 13 or the pharmaceutical composition of any one of claims 14 to 16, wherein the fragment is an antigen-binding fragment.