Claims:

1. A monoclonal antibody or an antigen-binding fragment thereof, which specifically binds human Factor XI and/or human Factor XIa comprising

    (a) a CDR1 of the light chain comprising the sequence KASQSVLYSGDNYLN (SEQ ID NO: 8);
    (b) a CDR2 of the light chain comprising the sequence AASTLES (SEQ ID NO: 9); and
    (c) a CDR3 of the light chain comprising the sequence QQYNGDPWT (SEQ ID NO: 10);
    (d) a CDR1 of the heavy chain comprising the sequence TSGMGVG (SEQ ID NO: 11);
    (e) a CDR2 of the heavy chain comprising the sequence HIDWDDDKYYSPSLKS (SEQ ID NO: 12); and
    (f) a CDR3 of the heavy chain comprising the sequence IRSSVYAHYYGMDY (SEQ ID NO: 13).

2. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1 comprising a V_L region as depicted in SEQ ID NO: 17.

3. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody comprises a V_H region as depicted in SEQ ID NO: 18.

4. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody comprises a V_L region as depicted in SEQ ID NO: 17 and a V_H region as depicted in SEQ ID NO: 18.

5. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody comprises a light chain as depicted in SEQ ID NO: 27.

6. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody comprises a heavy chain as depicted in SEQ ID NO: 28.

7. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody comprises a light chain as depicted in SEQ ID NO: 27 and a heavy chain as depicted in SEQ ID NO: 28.

8. The monoclonal antibody or an antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody is a humanized monoclonal antibody or a chimeric monoclonal antibody.

9. The monoclonal antibody or antigen-binding fragment thereof according to claim 1, wherein the monoclonal antibody is an IgG, preferably an IgG1 or IgG4.

10. A polynucleotide encoding the monoclonal antibody or antigen-binding fragment thereof of claim 1.

11. A vector, which comprises the polynucleotide of claim 10.

12. A culture comprising a host cell that comprises the nucleic acid according to claim 10.

13. A process for the production of a monoclonal antibody or antigen-binding fragment, said process comprising culturing the culture comprising the host cell of claim 12 under conditions allowing the expression of the monoclonal antibody or antigen-binding fragment thereof.

14. A pharmaceutical composition comprising the monoclonal antibody or antigen-binding fragment produced according to the process of claim 13 and a pharmaceutically acceptable excipient.

15. A pharmaceutical composition comprising the monoclonal antibody or antigen-binding fragment thereof according to claim 1 and a pharmaceutically acceptable excipient.

16. The pharmaceutical composition according to claim 14, further comprising one or more additional active agent.

17. The monoclonal antibody or antigen-binding fragment thereof according to any one of claims 1 to 9 or produced according to the process of claim 13, the polynucleotide according to claim 10, the vector according to claim 11, the culture according to claim 12 or the pharmaceutical composition according to any one of claims 14 to 16 for use as a medicament.

18. Use of the monoclonal antibody or antigen-binding fragment thereof according to any one of claims 1 to 9 or produced according to the process of claim 13, the polynucleotide according to claim 10, the vector according to claim 11, the culture according to claim 12 or the pharmaceutical composition according to any one of claims 14 to 16 in the

manufacture of a medicament in the treatment and/or prophylaxis of thrombotic or thromboembolic disorders and/or thrombotic or thromboembolic complications.

19. A kit comprising the monoclonal antibody or antigen-binding fragment thereof according to claim 1 in lyophilized form and a pharmaceutically acceptable carrier for resuspension of the monoclonal antibody or antigen-binding fragment thereof.

20. The process of claim 13 further comprising recovering the produced antibody or antigen-binding fragment thereof from the culture.