

Claims

1. An isolated antibody or antigen-binding portion thereof that binds to a filovirus, wherein the antibody or antigen-binding portion thereof comprises:

- a) a light chain CDR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 6, 78, or 150;
- b) a light chain CDR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 7, 79, or 151;
- c) a light chain CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 8, 80 or 152;
- d) a heavy chain CDR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 18, 90, or 162;
- e) a heavy chain CDR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 19, 91, or 163;
- f) a heavy chain CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 20, 92, and 164;
- g) a light chain FR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 333, 349, 357, 373, or 381;
- h) a light chain FR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 334, 342, 350, 358, 374, 382;
- i) a light chain FR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 335, 343, 351, 359, 367, 375, 383, or 391;
- j) a light chain FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 336, 344, 360, 368, or 376;
- k) a heavy chain FR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 337, 361, 369, 377, 385, or 393;
- l) a heavy chain FR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 338, 346, 354, 362, 378, 386, 394, or 402;

- l) a heavy chain FR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 338, 346, 354, 362, 378, 386, 394, or 402;
 - m) a heavy chain FR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 339, 347, 355, 363, 371, 379, 387, 395 or 403; and,
 - n) a heavy chain FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NO: 340 or 372.
2. The isolated antibody or antigen-binding portion thereof of claim 1, wherein the antibody or antigen-binding portion thereof comprises:
- a) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 6, 7 and 8, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 18, 19 and 20, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 333, 334, 335 and 336, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 337, 338, 339, and 340, respectively;
 - b) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 30, 31, and 32, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 42, 43, and 44, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 341, 342, 343, and 344, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 345, 346, 347, and 348, respectively;
 - c) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID

NOs: 54, 55, and 56, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 66, 67, and 68, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 349, 350, 351, and 352, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 353, 354, 355, and 356, respectively;

- d) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 78, 79 and 80, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 90, 91 and 92, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 357, 358, 359 and 360, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 361, 362, 363, and 364, respectively;
- e) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 102, 103, and 104, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 114, 115, and 116, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 365, 366, 367, and 368, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 369, 370, 371, and 372, respectively;
- f) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 126, 127, and 128, respectively; a heavy chain CDR1, CDR2, and CDR3

comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 138, 139, and 140, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 373, 374, 375, and 376, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 377, 378, 379, and 380, respectively;

- g) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 150, 151, and 152, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 162, 163, and 164, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 381, 382, 383, and 384, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 385, 386, 387 and 388, respectively;
- h) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 174, 175, and 176, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 186, 187, and 188, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 389, 390, 391, and 392, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 393, 394, 395, and 396, respectively; or
- i) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 198, 199 and 200, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to

an amino acid sequence comprising SEQ ID NOs: 210, 211, and 212, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 397, 398, 399, and 400, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence comprising SEQ ID NOs: 401, 402, 403 and 404, respectively.

3. An isolated antibody or antigen-binding portion thereof that binds to a filovirus, wherein the antibody or antigen-binding portion thereof comprises:

- a) a light chain CDR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 3, 75, or 147;
- b) a light chain CDR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 4, 76, or 148;
- c) a light chain CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 5, 77, or 149;
- d) a heavy chain CDR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 15, 87, or 159;
- e) a heavy chain CDR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 16, 88, or 160;
- f) a heavy chain CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 17, 89, or 161;
- g) a light chain FR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 9, 57, 81, 129, or 153;
- h) a light chain FR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 10, 34, 58, 82, 130, or 154;

- i) a light chain FR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 11, 35, 59, 83, 107 131, 155, or 179;
 - j) a light chain FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 12, 36, 60, 84, 108, or 132;
 - k) a heavy chain FR1 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 21, 93, 117, 141, 165, or 189;
 - l) a heavy chain FR2 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 22, 46, 70, 94, 142, 166, 190 or 214;
 - m) a heavy chain FR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 23, 47, 71, 95, 119, 143, 167, 191 or 215; and,
 - n) a heavy chain FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 24, 48, or 120.
4. The isolated antibody or antigen-binding portion thereof of claim 3, wherein the antibody or antigen-binding portion thereof comprises:
- a) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 3, 4, and 5, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 15, 16, and 17, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 9, 10, 11, and 12, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 21, 22, 23, and 24, respectively;

- b) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 27, 28, and 29, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 39, 40, and 41, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 33, 34, 35, and 36, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 45, 46, 47 and 48, respectively;
- c) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 51, 52, and 53, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 63, 64, and 65, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 57, 58, 59 and 60, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 69, 70, 71, and 72, respectively;
- d) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 75, 76, and 77, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 87, 88, and 89, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 81, 82, 83, and 84, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85%

- sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 93, 94, 95, and 96, respectively;
- e) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 99, 100, and 101, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 111, 112, and 113, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 105, 106, 107, and 108, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 117, 118, 119, and 120, respectively;
- f) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 123, 124 and 125, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 135, 136, and 137, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 129, 130, 131, and 132, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 141, 142, 143, and 144, respectively;
- g) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 147, 148 and 149, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 159, 160, and 161, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a

- nucleotide sequence comprising SEQ ID NOs: 153, 154, 155, and 156, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 165, 166, 167, and 168, respectively;
- h) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 171, 172, and 173, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 183, 184, and 185, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 177, 178, 179 and 180, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 189, 190, 191, and 192, respectively; or
- i) a light chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 195, 196 and 197, respectively; a heavy chain CDR1, CDR2, and CDR3 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 207, 208, and 209, respectively; a light chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 201, 202, 203 and 204, respectively; and a heavy chain FR1, FR2, FR3, and FR4 comprising an amino acid sequence that has at least about 85% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NOs: 213, 214, 215 and 216, respectively.

5. An isolated antibody or antigen-binding portion thereof that binds to a filovirus, wherein the antibody or antigen-binding portion thereof comprises:

- a) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 13, 37, 61, 85, 109, 133, 157, 181, or 205; and
- b) a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 1, 25, 49, 73, 97, 121, 145, 169, or 193.

6. The antibody or antigen-binding portion thereof of claim 5, wherein the antibody or antigen-binding portion thereof comprises:

- a) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 13 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 1;
- b) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 37 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 25;
- c) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 61 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 49;
- d) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 85 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 73;
- e) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 109 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 97;

- f) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 133 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 121;
 - g) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 157 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 145;
 - h) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 181 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 169; or
 - i) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 205 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to an amino acid sequence encoded by a nucleotide sequence comprising SEQ ID NO: 193.
7. An isolated antibody or antigen-binding portion thereof that binds to a filovirus, wherein the antibody or antigen-binding portion thereof comprises:
- a) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 14, 38, 62, 86, 110, 134, 158, 182, or 206; and
 - b) a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 2, 26, 50, 74, 98, 122, 146, 170 or 194.
8. The isolated antibody or antigen-binding portion of claim 7, wherein the antibody or antigen-binding portion thereof comprises:
- a) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 14 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 2;

- b) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 38 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 26;
- c) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 62 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 50;
- d) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 86 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 74;
- e) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 110 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 98;
- f) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 134 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 122;
- g) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 158 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 146;
- h) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 182 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 170; or
- i) a variable heavy chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 206 and a variable light chain comprising an amino acid sequence that has at least about 98% sequence identity to SEQ ID NO: 194.

9. The isolated antibody or antigen-binding portion of claim 8, wherein the antibody or antigen-binding portion thereof comprises:

- a) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 14 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 2;
- b) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 38 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 26;

- c) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 62 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 50;
- d) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 86 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 74;
- e) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 110 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 98;
- f) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 134 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 122;
- g) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 158 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 146;
- h) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 182 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 170; or
- i) a variable heavy chain comprising an amino acid sequence comprising SEQ ID NO: 206 and a variable light chain comprising an amino acid sequence comprising SEQ ID NO: 194.

10. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion is selected from the group consisting of: (i) a whole immunoglobulin; (ii) an scFv; (iii) a Fab fragment; (iv) an F(ab')₂; and (v) a disulfide linked Fv.

11. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion thereof binds to the GP subunit of the filovirus.

12. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion thereof binds to the mucin domain of the GP1 subunit of the filovirus.

13. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion thereof binds to the GP2 subunit of the filovirus.
14. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion thereof binds to the GP2 wing subunit of the filovirus.
15. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the antibody or antigen-binding portion thereof is cross-reactive to at least two filoviruses.
16. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the filovirus is *Ebolavirus* or *Marburgvirus*.
17. The isolated antibody or antigen-binding portion thereof of any one of the preceding claims, wherein the filovirus is *Zaire ebolavirus*, *Sudan ebolavirus*, *Reston ebolavirus*, *Tai Forest ebolavirus*, *Cote d'Ivoire ebolavirus* or *Bundibugyo ebolavirus*.
18. A nucleic acid sequence encoding the antibody or antigen-binding portion thereof of any one of claims 1-17.
19. An expression vector comprising a promoter operably linked to a nucleotide sequence of claim 18.
20. An expression vector comprising a nucleotide sequence with the following sequences:
- a) SEQ ID NOs: 3, 4, 5, 9, 10, 11, 12, 15, 16, 17, 21, 22, 23, and 24;
 - b) SEQ ID NOs: 27, 28, 29, 33, 34, 35, 36, 39, 40, 41, 45, 46, 47, and 48;
 - c) SEQ ID NOs: 51, 52, 53, 57, 58, 59, 60, 63, 64, 65, 69, 70, 71, and 72;
 - d) SEQ ID NOs: 75, 76, 77, 81, 82, 83, 84, 87, 88, 89, 93, 94, 95, and 96;
 - e) SEQ ID NOs: 99, 100, 101, 105, 106, 107, 108, 111, 112, 113, 117, 118, 119, and 120,

- f) SEQ ID NOs: 123, 124, 125, 129, 130, 131, 132, 135, 136, 137, 141, 142, 143, and 144;
 - g) SEQ ID NOs: 147, 148, 149, 153, 154, 155, 156, 159, 160, 161, 165, 166, 167, and 168;
 - h) SEQ ID NOs: 171, 172, 173, 177, 178, 179, 180, 183, 184, 185, 189, 190, 191, and 192; or
 - i) SEQ ID NOs: 195, 196, 197, 201, 202, 203, 204, 207, 208, 209, 213, 214, 215 and 216.
21. An expression vector comprising a nucleotide sequence with the following sequences:
- a) SEQ ID NOs: 1 and 13;
 - b) SEQ ID NOs: 25 and 37;
 - c) SEQ ID NOs: 49 and 61;
 - d) SEQ ID NOs: 73 and 85;
 - e) SEQ ID NOs: 97 and 109;
 - f) SEQ ID NOs: 121 and 133;
 - g) SEQ ID NOs: 145 and 157;
 - h) SEQ ID NOs: 169 and 181; or
 - i) SEQ ID NOs: 193 and 205.
22. A host cell comprising the expression vector of any one of claims 19-21.
23. The host cell of claim 22, wherein the cell is a bacterial, eukaryotic or mammalian cell.
24. The host cell of claim 22 or 23, wherein the cell is COS-1, COS-7, HEK293, BHK21, CHO, BSC-1, HepG2, SP2/0, HeLa, myeloma or lymphoma cell.
25. A method of producing an antibody or antigen-binding portion thereof that binds to a filovirus comprising:
- a) culturing a host cell of any one of claims 22-24; and
 - b) recovering the antibody or antigen-binding portion thereof.
26. A pharmaceutical composition comprising the antibody or antigen-binding portion thereof of any one of claims 1-17 and a pharmaceutically acceptable carrier.

27. A composition comprising the antibody or antigen-binding portion thereof of any one of claims 1-17 and one or more other antibodies or antigen-binding portions thereof, wherein the one or more other antibodies or antigen-binding portions thereof binds a protein produced by a virus in the *Filoviridae* family.
28. The composition of claim 27, wherein the protein is a glycoprotein.
29. The composition of claim 27 or 28, wherein the virus is *Ebolavirus* or *Marburgvirus*.
30. The composition of claim 29, wherein the virus is *Zaire ebolavirus*, *Sudan ebolavirus*, *Reston ebolavirus*, *Tai Forest ebolavirus*, *Bundibugyo ebolavirus*, *Cote d'Ivoire ebolavirus*, Marburg virus or Ravn virus.
31. The composition of any one of claims 27-30, further comprising a pharmaceutically acceptable carrier.
32. A therapeutically effective amount of the antibody or antigen-binding portion thereof of any one of claims 1-17 for use in ameliorating, treating or preventing a filovirus infection in a subject in need thereof.
33. A therapeutically effective amount of the composition of any one of claims 26-31 for use in treating or preventing a filovirus infection in a subject in need thereof.
34. Use of a therapeutically effective amount of the antibody or antigen-binding portion thereof of any one of claims 1-17 in the manufacture of a medicament for the treatment, amelioration or prevention of a filovirus infection.
35. Use of a therapeutically effective amount of the antibody or antigen-binding portion thereof of any one of claims 26-31 in the manufacture of a medicament for the treatment, or prevention of a filovirus infection.
36. The use of claim 34 or claim 35, wherein the subject is a human.

37. A method for detecting *Marburgvirus* in a sample, the method comprising contacting the sample with the antibody or antigen-binding portion thereof of any one of claims 1-13.

38. The method of claim 37, wherein the sample is a cell, tissue, or biological fluid from a subject suspected of having or at risk of a filovirus infection.

39. An expression vector comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1, 13, 25, 37, 49, 61, 73, 85, 97, 109, 121, 133, 145, 157, 169, 181, 193, and 205.