

## CLAIMS

1. An anti-ceramide antibody or antigen-binding fragment thereof comprising an immunoglobulin heavy chain variable region (VH) comprising a heavy chain complementarity determining region (CDR) 1 (HCDR1), a heavy chain CDR2 (HCDR2), and a heavy chain CDR3 (HCDR3), and an immunoglobulin light chain variable region (VL) comprising a light chain complementarity determining region (CDR) 1 (LCDR1), a light chain CDR2 (LCDR2), and a light chain CDR3 (LCDR3), wherein:

- (a) the HCDR1 comprises an amino acid sequence selected from SEQ ID NO: 1 and 2;
- (b) the HCDR2 comprises an amino acid sequence selected from SEQ ID NO: 3, 4, 5, and 6;
- (c) the HCDR3 comprises the amino acid sequence of SEQ ID NO: 7;
- (d) the LCDR1 comprises the amino acid sequence of SEQ ID NO: 8;
- (e) the LCDR2 comprises the amino acid sequence of SEQ ID NO: 9; and
- (f) the LCDR3 comprises the amino acid sequence of SEQ ID NO: 10.

2. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the HCDR1 comprises SEQ ID NO: 1 and the HCDR2 comprises SEQ ID NO: 3.

3. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein:

(i) the HCDR1 comprises SEQ ID NO: 1 and the HCDR2 comprises SEQ ID NO: 4;

~~4. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein (ii)~~  
the HCDR1 comprises SEQ ID NO: 1 and the HCDR2 comprises SEQ ID NO: 5;

~~5. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein~~  
(iii) the HCDR1 comprises SEQ ID NO: 1 and the HCDR2 comprises SEQ ID NO: 6;

(iv)

~~6. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the~~  
HCDR1 comprises SEQ ID NO: 2 and the HCDR2 comprises SEQ ID NO: 3;

(v)

~~7. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the HCDR1 comprises SEQ ID NO: 2 and the HCDR2 comprises SEQ ID NO: 4;~~

(vi)

~~8. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the HCDR1 comprises SEQ ID NO: 2 and the HCDR2 comprises SEQ ID NO: 5; or~~

(vii)

~~9. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the HCDR1 comprises SEQ ID NO: 2 and the HCDR2 comprises SEQ ID NO: 6.~~

4. The anti-ceramide antibody or antigen-binding fragment thereof of claim 2, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, at least 97%, or 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, at least 97%, or 100% identical to SEQ ID NO: 22.

~~105. The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein:~~

~~(i) the VH comprises an amino acid sequence that is at least 90%, at least 95%, or at least 97%, or 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, or at least 97%, or 100% identical to SEQ ID NO: 22;~~

(ii)

~~11. The anti-ceramide antibody or antigen-binding fragment thereof of claim 10, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

~~12. The anti-ceramide antibody or antigen-binding fragment thereof of claim 10, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

~~13. The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, or at least 97%, or 100%~~

identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or at least 97%, or 100%~~ identical to SEQ ID NO: 23;

(iii):-

~~14. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 13, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

~~15. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 13, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

~~16. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or at least 97%, or 100%~~ identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or at least 97%, or 100%~~ identical to SEQ ID NO: 24;~~

(iv):-

~~17. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 16, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

~~18. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 16, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

~~19. — The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, or at least 97% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, or at least 97% identical to SEQ ID NO: 22.~~

20. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 19, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

21. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 19, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

22. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 23;~~

(v);

23. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 22, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

24. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 22, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

25. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 24~~

(vi);

26. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 25, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

27. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 25, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

28. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 22;~~

(vii):-

29. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 28, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

30. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 28, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

31. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 23;~~

32. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 31, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

33. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 31, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

(viii)

34. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 24.~~

35. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 34, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

36. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 34, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

(ix)

37. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 20 and the VL comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 22; or~~

38. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 37, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 20 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

39. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 37, wherein the VH amino acid sequence consists of SEQ ID NO: 20 and the VL amino acid sequence consists of SEQ ID NO: 22; or~~

(x)

40. ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 1, wherein the~~  
VH comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100%  
identical to SEQ ID NO: 21 and the VL comprises an amino acid sequence that is at least 90%, at  
least 95%, ~~or~~ at least 97%, or 100% identical to SEQ ID NO: 22.

41. ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 40, wherein the~~  
VH comprises an amino acid sequence that is ~~100% identical to SEQ ID NO: 21 and the VL~~  
~~comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

42. ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 40, wherein the~~  
VH amino acid sequence consists of SEQ ID NO: 21 and the VL amino acid sequence consists of  
SEQ ID NO: 22.

436. ~~The~~ An anti-ceramide antibody or antigen-binding fragment thereof any one of claims 1-  
5, comprising an immunoglobulin heavy chain variable region (VH) and an immunoglobulin light  
chain variable region (VL),

wherein the VH comprises an amino acid sequence that is at least 90%, at least 95%, at  
least ~~or~~ 97%, or 100% identical to a sequence selected from SEQ ID NO: 17, 18, 19, 20, and 21;  
and

wherein the VL comprises an amino acid sequence that is at least 90%, at least 95%, or at  
least 97%, or 100% identical to a sequence selected from SEQ ID NO: 22, 23 and 24.

44. ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the~~  
VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO:  
17 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to  
SEQ ID NO: 22.

45. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 44, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

46. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43-45, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

47. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 23.~~

48. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 47, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

49. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 47 or 48, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

50. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 24.~~

51. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 50, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 17 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

~~52. —The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 50 or 51, wherein the VH amino acid sequence consists of SEQ ID NO: 17 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

~~53. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 22.~~

~~54. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 53, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

~~55. —The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 53 or 54, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

~~56. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 23.~~

~~57. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 56, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

~~58. —The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 56 or 57, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

59. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 24.~~

60. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 59, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 18 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

61. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 59 or 60, wherein the VH amino acid sequence consists of SEQ ID NO: 18 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

62. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 22.~~

63. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 62, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

64. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 62 or 63, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

65. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 23.~~

66. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 65, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 23.~~

67. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 65 or 66, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 23.~~

68. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 24.~~

69. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 68, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 19 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 24.~~

70. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 68 or 69, wherein the VH amino acid sequence consists of SEQ ID NO: 19 and the VL amino acid sequence consists of SEQ ID NO: 24.~~

71. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 20 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 22.~~

72. — ~~The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 71, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 20 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

~~73. —The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 71 or 72, wherein the VH amino acid sequence consists of SEQ ID NO: 20 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

~~74. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43, wherein the VH comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 21 and the VL comprises an amino acid sequence that is at least 90%, 95%, or 97% identical to SEQ ID NO: 22.~~

~~75. —The anti-ceramide antibody or antigen-binding fragment thereof of claim 43 or 74, wherein the VH comprises an amino acid sequence that is 100% identical to SEQ ID NO: 21 and the VL comprises an amino acid sequence that is 100% identical to SEQ ID NO: 22.~~

~~76. —The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 43, 74 or 75, wherein the VH amino acid sequence consists of SEQ ID NO: 21 and the VL amino acid sequence consists of SEQ ID NO: 22.~~

77. The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-76, wherein the antibody or antigen-binding fragment is humanized.

78. The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-76, wherein the antibody or antigen-binding fragment is fully human.

79. The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-78, wherein the anti-ceramide antibody comprises one or more point mutations in the Fc domain of the antibody.

810. The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-79, wherein the anti-ceramide antibody or antigen-binding fragment thereof is a single chain variable fragment (scFv).

811. The anti-ceramide antibody or antigen-binding fragment thereof of claim 180, wherein the scFv comprises an amino acid sequence that is at least 90%, at least 95%, ~~or~~ at least 97%, or 100% identical to a sequence selected from the group consisting of SEQ ID NOs: 48-61, or -

~~82. The anti-ceramide antibody or antigen-binding fragment thereof of claim 80, wherein the scFv comprises an amino acid sequence that is 100% identical to a sequence selected from the group consisting of SEQ ID NOs: 48-61.~~

~~83. The anti-ceramide antibody or antigen-binding fragment thereof of claim 80, wherein the scFv consists of a sequence selected from the group consisting of SEQ ID NOs: 48-61.~~

12. The anti-ceramide antibody or antigen-binding fragment thereof of claim 10, wherein the scFv comprises an amino acid sequence that is at least 90%, at least 95%, at least 97%, or 100% identical to SEQ ID NO: 48 or 51, or the scFv consists of the amino acid sequence of SEQ ID NO: 48 or 51.

8413. The anti-ceramide antibody or antigen-binding fragment thereof of claim 810, wherein the light chain variable region of said scFv is carboxy-terminal to the heavy chain variable region of said scFv.

~~8514.~~ The anti-ceramide antibody or antigen-binding fragment thereof of claim 810, wherein the light chain variable region of said scFv is amino-terminal to the heavy chain variable region of said scFv.

~~8615.~~ The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 810-8514, wherein the scFv comprises a linker polypeptide.

8716. The anti-ceramide antibody or antigen-binding fragment thereof of claim 8615, wherein the linker polypeptide is between the light chain variable region and the heavy chain variable region of the said scFv.

8817. The anti-ceramide antibody or antigen-binding fragment thereof of claim 8615 or 8716, wherein the linker polypeptide comprises a Gly<sub>4</sub>Ser linker or -

89. ~~The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 86-88, wherein the linker polypeptide comprises the formula (Gly<sub>4</sub>Ser)<sub>n</sub>, wherein n = 1-5.~~

90. ~~An anti-ceramide single chain variable fragment (scFv) comprising an amino acid sequence that is at least 80%, at least 85%, at least 90%, at least 95%, or at least 97% identical to a sequence selected from the group consisting of SEQ ID NOs: 48-61.~~

91. ~~The anti-ceramide scFv of claim 90, wherein the scFv comprises an amino acid sequence that is 100% identical to a sequence selected from the group consisting of SEQ ID NOs: 48-61.~~

92. ~~The anti-ceramide scFv of claim 90, consisting of an amino acid sequence selected from the group consisting of SEQ ID NOs: 48-61.~~

9318. A polynucleotide encoding the anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-9217.

94. ~~An anti-ceramide single chain variable fragment (scFv) comprising an amino acid sequence that is at least 80%, at least 85%, at least 90%, at least 95%, or at least 97% identical to SEQ ID NO: 48 or 51.~~

95. ~~The anti-ceramide scFv of claim 94, wherein the scFv comprises an amino acid sequence that is 100% identical to SEQ ID NO: 48 or 51.~~

~~96.~~—The anti-ceramide scFv of claim 94, consisting of the amino acid sequence of SEQ ID NO: 48 or 51.

~~97.~~—A polynucleotide encoding the anti-ceramide single chain variable fragment (scFv) of any one of claims 94-96.

~~98~~19. An expression vector comprising the polynucleotide of claim 18~~any one of claims 93 or 97~~.

~~99~~20. A host cell comprising the polynucleotide of claim 18~~any one of claims 93 or 97~~ or the expression vector of claim 19.

~~214~~00. A method of manufacturing the anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-~~89~~17~~or the anti-ceramide single chain variable fragment (scFv) of any one of claims 94-96~~, comprising introducing ~~the~~ an expression vector comprising a polynucleotide encoding the anti-ceramide antibody or antigen-binding fragment thereof of claim 98 into a host cell.

~~401~~22. Use of ~~A method of inhibiting apoptosis in a subject in need thereof, comprising administering to the subject~~ a therapeutically effective amount of the anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-~~88~~17~~or the anti-ceramide scFv of any one of claims 94-96~~ in the manufacture of a medicament for inhibiting apoptosis in a subject in need thereof, wherein said medicament is to be administered to the subject.

~~402~~23. The ~~method~~ use of claim ~~401~~22, wherein the apoptosis is associated with a disease selected from the group consisting of graft versus host disease, radiation disease, GI syndrome, and autoimmune disease.

~~403~~24. The ~~method~~ use of claim ~~402~~23, wherein the disease is radiation disease or GI syndrome and the anti-ceramide antibody or antigen-binding fragment thereof is to be administered before the subject is exposed to radiation.

~~10425~~. The ~~method-use~~ of claim ~~10223~~, wherein the disease is graft versus host disease and the anti-ceramide antibody or antigen-binding fragment thereof is to be administered before the subject receives a transplant.

~~10526~~. The ~~method-use~~ of claim ~~10425~~, wherein the transplant is a bone marrow transplant.

~~10627~~. The ~~method-use~~ of claim ~~10122~~, wherein the anti-ceramide antibody or antigen-binding fragment thereof is to be administered intravenously, intramuscularly, intraperitoneally, intracerebrospinally, subcutaneously, intrasynovially, intrathecally, orally, topically, or via inhalation.

~~10728~~. Use of A method for mitigating apoptosis in a subject with GI syndrome comprising administering to the subject an effective amount of the anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-1789 or the anti-ceramide scFv of any one of claims 94-96, after the subject is exposed to penetrating radiation, in the manufacture of a medicament for mitigating apoptosis in a subject with GI syndrome, after the subject is exposed to penetrating radiation, wherein said medicament is to be administered to the subject.

~~10829~~. The ~~method-use~~ of claim ~~10728~~, wherein the anti-ceramide antibody or antigen-binding fragment thereof is to be administered immediately after the subject is exposed to penetrating radiation.

~~10930~~. The ~~method-use~~ of claim ~~10728~~, wherein the anti-ceramide antibody or antigen-binding fragment thereof is to be administered within 24 hours after the subject is exposed to penetrating radiation.

~~11031~~. Use of A method for inhibiting apoptosis in a subject with GvHD comprising administering to the subject an effective amount of anti-ceramide antibody or antigen binding fragment thereof of any one of claims 1-1789 or the anti-ceramide scFv of any one of claims 94-96, in the

manufacture of a medicament for inhibiting apoptosis in a subject with GvHD, either before the subject receives a transplant or after the subject receives a transplant prior to the onset of GvHD.

~~44~~32. The ~~method~~use of claim ~~31~~40, wherein the transplant is a bone marrow transplant.

33. The anti-ceramide antibody or antigen-binding fragment thereof of any one of claims 1-17 for use as a medicament.