

Secrets Plus, 4th edition, edited by McNally **PR**, 2010). The pain accompanying severe pancreatitis is managed simultaneously with intravenous analgesia (Chapter 37-Acute Pancreatitis, GI/Liver Secrets Plus, 4th edition, edited by McNally **PR**, 2010). Chronic pancreatitis is often only treated with medication to treat the pain or complications of pancreatitis, leaving the underlying chronic pancreatitis itself not directly treated (Chapter 38-Chronic Pancreatitis, GI/Liver Secrets Plus, 4th edition, edited by McNally **PR**, 2010).

[0005] There has been a lack of success in therapeutic agents developed so far to directly treat, prevent, manage, or ameliorate pancreatitis or target the mechanisms that underlying the development of pancreatitis. Thus there is need to identify a therapeutic agent that can treat, prevent, manage, or ameliorate pancreatitis including chronic and acute pancreatitis.

4. SUMMARY

[0006] In one example, provided herein is a method for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof comprising administering to the subject a therapeutically effective amount of an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a).

[0006a] In one aspect, the present disclosure refers to use of an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a) in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof.

[0007] In another example, provided herein is a method for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof comprising:

- (1) administering to the subject at a first dose an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a),
- (2) determining a severity of pancreatitis in said subject, and
- (3) administering a second dose of the antibody or functional fragment thereof that binds to anti-sLe^a at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the anti-sLe^a, or administering a second dose of the anti-sLe^a at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

[0007a] In another aspect, the present disclosure refers to use of an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a) in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof wherein:

(1) a first dose of the medicament is to be administered to the subject,

(2) a severity of pancreatitis in said subject is to be determined, and

(3) a second dose of the medicament is to be administered to the subject at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the medicament, or a second dose of the medicament is to be administered at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

[0008] In certain example, provided herein is a method for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof comprising administering to the subject a therapeutically effective amount of a therapeutic agent that binds to a CA19-9.

[0008a] In another aspect, the present disclosure refers to use of a therapeutic agent that binds to a CA19-9 in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof.

[0009] In one example, provided herein is a method for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof comprising:

(1) administering to the subject at a first dose a therapeutic agent that binds to a

CA19-9,

(2) determining a severity of pancreatitis in said subject, and

(3) administering a second dose of the therapeutic agent at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the agent, or administering a second dose of the therapeutic agent at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

[0010] In another aspect, the present disclosure refers to use of a therapeutic agent that binds to a CA19-9 in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof wherein:

(1) a first dose of the medicament is to be administered to the subject,

(2) a severity of pancreatitis in said subject is to be determined, and

(3) a second dose of the medicament is to be administered at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the medicament, or a second dose of the medicament is to be administered at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

[0011] In some examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain, said VH domain comprising an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2, residues 20-142 of SEQ ID NO: 6, residues 20-142 of SEQ ID NO: 10, and residues 20-145 of SEQ ID NO: 14.

[0012] In certain examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a variable light chain (VL) domain, said VL domain comprising an amino acid sequence selected from the group consisting of residues 20-130 of SEQ ID NO: 4, residues 20-129 of SEQ ID NO: 8, residues 20-130 of SEQ ID NO: 12, and residues 23-130 of SEQ ID NO: 16.

[0013] In other examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain and a variable light chain (VL) domain, where said VH domain and said VL domain respectively comprise an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2 and residues 20-130 of SEQ ID NO: 4; residues 20-142 of SEQ ID NO: 6 and residues 20-129 of SEQ ID NO: 8; residues 20-142 of SEQ ID NO: 10 and residues 20-130 of SEQ ID NO: 12; and residues 20-145 of SEQ ID NO: 14 and residues 23-130 of SEQ ID NO: 16.

[0014] In some examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region comprising three complementarity determining regions (CDRs) having the amino acid sequence of the three heavy chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB-8059, and a light chain variable region comprising three CDRs having the amino acid

sequence of the three light chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059.

[0015] In certain examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region consisting of the amino acid sequence of the heavy chain variable region of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB-8059, and a light chain variable region consisting of the amino acid sequence of the light chain variable region of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059.

[0016] In other examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof comprises a heavy chain consisting of the amino acid sequence of the heavy chain of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059, and a light chain consisting of the amino acid sequence of the light chain of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059.

[0017] In some examples of the methods provided herein, the anti-sLe^a antibody functional fragment is selected from the group consisting of a Fab, a Fab', a F(ab')₂, a scFV, a diabody, a triabody, a minibody and a single-domain antibody (sdAB). In certain examples, the anti-sLe^a antibody or functional fragment thereof is a diabody. In further examples, the diabody comprises the amino acid sequence of SEQ ID NO: 18 or 20.

[0018] In certain examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof is a monoclonal antibody. In some examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof is an IgG or IgM isotype. In certain examples, the IgG antibody is an IgG1, IgG2, IgG3, or IgG4 subclass.

[0019] In some examples of the methods provided herein, the anti-sLe^a antibody or functional fragment thereof is formulated as a pharmaceutical composition comprising a pharmaceutically acceptable carrier. In certain examples, the antibody or functional fragment thereof is administered to a subject by a parenteral route of administration. In some examples, the parenteral administration is selected from a group consisting of subcutaneous injection, intramuscular injection, and intravenous injection.

[0020] In some examples of the methods provided herein, the antibody or functional fragment thereof is administered to a subject at a dose range from about 0.1 mg/kg/dose to

about 10 mg/kg/dose. In certain examples, the antibody or functional fragment thereof is administered to a subject weekly, bi-weekly, monthly, or bi-monthly. In some examples, the antibody or functional fragment thereof is administered for about one, two, three, four, five, or six months.

[0021] In certain examples of the methods provided herein, the therapeutic agent is an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a).

[0022] In some examples of the methods provided herein, the therapeutic agent is a peptide or peptidomimetic molecule. In certain examples, the peptide or peptidomimetic has the property of specifically binding to Sialyl-Lewis^a.

[0023] In certain examples of the methods provided herein, the pancreatitis is characterized by one or more markers. In some examples of the methods provided herein, the severity of the pancreatitis is determined by one or more markers. In certain examples of the methods provided herein, the subject has elevated levels of one or more markers for pancreatitis. In some examples of the methods provided herein, the administering of the therapeutic agent results in reduced levels of one or more markers for pancreatitis in the subject. In certain examples, the one or more markers are selected from a group consisting of a physiological marker, a histological marker, a serological marker, and a signaling marker. In some examples, the histological marker is selected from a group consisting of immune cell invasion, collagen deposition, fibrotic tissue, fat necrosis, interstitial edema, acinar and blood vessel destruction, interstitial hemorrhage, ductal dilation, acinar cell homogenization, and expression level of CA19-9. In certain examples, the one or more markers comprise expression level of CA19-9. In other examples, the one or more markers are determined by immunohistochemistry. In certain examples, the serological marker is selected from a group consisting of serum lipase level, serum amylase level, and serum C reactive protein level. In some examples, the one or more markers is a serum lipase level over 200 U/L. In certain examples, the one or more markers is a serum amylase level over 200 U/L. In some examples, the one or more markers is a serum amylase level three times over the upper limit of normal serum amylase level of a control subject. In certain examples, the one or more markers is a serum lipase level three times over the upper limit of normal serum lipase level of a control subject. In some examples,

the physiological marker is selected from a group consisting of weight loss, malabsorption of food, pancreatic atrophy, pancreatic enlargement, pancreatic inflammation, and bile reflux.

[0024] In one example, provided herein is a method for preventing, treating, ameliorating, or managing pancreatitis in a subject having elevated pancreatic sLe^a, said method comprising administering to the subject a therapeutically effective amount of a therapeutic agent that specifically binds to sLe^a.

[0024a] In another aspect, the present disclosure refers to use of a therapeutic agent that specifically binds to sLe^a in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject having elevated pancreatic sLe^a.

[0025] In certain examples of the methods provided herein, the pancreatitis is a pancreatitis selected from a group consisting of chronic pancreatitis and acute pancreatitis. In some examples, the chronic pancreatitis is selected from a group consisting of mild chronic pancreatitis, moderate chronic pancreatitis, and severe chronic pancreatitis. In certain examples, the acute pancreatitis is selected from a group consisting of mild acute pancreatitis, moderate acute pancreatitis, and severe acute pancreatitis.

[0026] In some examples of the methods provided herein, the subject is a mammal. In certain examples of the methods provided herein, the mammal is a human.

5. BRIEF DESCRIPTION OF THE DRAWINGS

[0027] **FIG. 1A** shows the percentage of human chronic pancreatitis patients exhibiting high levels of pancreatic tissue CA19-9 (left panel), and representative immunohistochemistry (IHC) showing CA19-9 predominantly in pancreatic ducts (right two panels, indicated by open arrows). **FIG. 1B** shows example CA19-9 IHC from excluded (left), CA19-9 high (middle), and CA19-9 low/negative (right) human chronic pancreatitis specimens. Scale bars= 100µm. **FIG. 1C** shows schematic representation of Lewis antigen production. **FIG. 1D** shows that ectopic FUT3 induces Lewis^x (Le^x) but not CA19-9/Sialyl-Lewis^a (sLe^a) expression in mouse pancreatic ductal adenocarcinoma (PDAC) cells by flow cytometric analysis. **FIG. 1E** shows CA19-9 flow cytometry of mouse PDAC cells stably and constitutively expressing FUT3 with β3GALT5 compared to parental KPC cell controls. The expression of both FUT3 and β3GALT5 led to the cell surface expression of CA19-9 at levels equivalent to those observed in a human cancer cell line (Colo205). **FIG. 1F** shows CA19-9 immunofluorescent evaluation of the human PDAC cell line Suit2 (top panels) and mouse PDAC cells (bottom panels) stably and constitutively expressing FUT3 and β3GALT5 or PDAC cells expressing empty vector control. Scale bars= 25µm. **FIG. 1G** shows

What is claimed is:

1. Use of an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a) in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof.

2. Use of an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a) in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof wherein:

(1) a first dose of the medicament is to be administered to the subject,

(2) a severity of pancreatitis in said subject is to be determined, and

(3) a second dose of the medicament is to be administered to the subject at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the medicament, or a second dose of the medicament is to be administered at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

3. The use of any one of claims 1 to 2, wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain, said VH domain comprising an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2, residues 20-142 of SEQ ID NO: 6, residues 20-142 of SEQ ID NO: 10, and residues 20-145 of SEQ ID NO: 14; or

wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable light chain (VL) domain, said VL domain comprising an amino acid sequence selected from the group consisting of residues 20-130 of SEQ ID NO: 4, residues 20-129 of SEQ ID NO: 8, residues 20-130 of SEQ ID NO: 12, and residues 23-130 of SEQ ID NO: 16; or

wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain and a variable light chain (VL) domain, where said VH domain and said VL domain respectively comprise an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2 and residues 20-130 of SEQ ID NO: 4; residues 20-142 of SEQ ID NO: 6 and residues 20-129 of SEQ ID NO: 8; residues 20-142

of SEQ ID NO: 10 and residues 20-130 of SEQ ID NO: 12; and residues 20-145 of SEQ ID NO: 14 and residues 23-130 of SEQ ID NO: 16; or

wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region comprising three complementarity determining regions (CDRs) having the amino acid sequence of the three heavy chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB- 8059, and a light chain variable region comprising three CDRs having the amino acid sequence of the three light chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059; or

wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region consisting of the amino acid sequence of the heavy chain variable region of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB- 8059, and a light chain variable region consisting of the amino acid sequence of the light chain variable region of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059; or

wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain consisting of the amino acid sequence of the heavy chain of an antibody produced by a hybridoma deposited under ATCC. Accession No. HB-8059, and a light chain consisting of the amino acid sequence of the light chain of an antibody produced by a hybridoma deposited under ATCC. Accession No. HB-8059.

4. The use of any one of claims 1 to 3, wherein said anti-sLe^a antibody functional fragment is selected from the group consisting of a Fab, a Fab', a F(ab')₂, a scFV, a diabody, a triabody, a minibody and a single-domain antibody (sdAB); wherein optionally said anti-sLe^a antibody or functional fragment thereof is a diabody; wherein optionally said diabody comprises the amino acid sequence of SEQ ID NO: 18 or 20; wherein optionally said anti-sLe^a antibody or functional fragment thereof is a monoclonal antibody; wherein optionally said anti-sLe^a antibody or functional fragment thereof is an IgG or IgM isotype; and wherein optionally said IgG antibody is an IgG1, IgG2, IgG3, or IgG4 subclass.

5. The use of any one of claims 1 to 4, wherein the anti-sLe^a antibody or functional fragment thereof is formulated as a pharmaceutical composition comprising a pharmaceutically acceptable carrier.

6. The use of any one of claims 1 to 5, wherein the antibody or functional fragment thereof is to be administered by a parenteral route of administration; wherein optionally the parenteral administration is selected from a group consisting of subcutaneous injection, intramuscular injection, and intravenous injection; wherein optionally the antibody or functional fragment thereof is to be administered at a dose range from about 0.1 mg/kg/dose to about 10 mg/kg/dose; wherein optionally the antibody or functional fragment thereof is to be administered weekly, bi-weekly, monthly, or bi-monthly; and wherein optionally the antibody or functional fragment thereof is to be administered for about one, two, three, four, five, or six months.

7. Use of a therapeutic agent that binds to a CA19-9 in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof.

8. Use of a therapeutic agent that binds to a CA19-9 in the manufacture of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject in need thereof wherein:

- (1) a first dose of the medicament is to be administered to the subject,
- (2) a severity of pancreatitis in said subject is to be determined, and
- (3) a second dose of the medicament is to be administered at the same or lower amount than the first dose if the severity of pancreatitis in the subject is reduced in comparison to the severity of pancreatitis in the subject before administration of the medicament, or a second dose of the medicament is to be administered at a higher amount than the first dose if the severity of pancreatitis in the subject is not reduced.

9. The use of any one of claims 7 to 8, wherein the therapeutic agent is an antibody or functional fragment thereof that binds to Sialyl-Lewis^a (anti-sLe^a).

10. The use of claim 9, wherein the anti-sLe^a antibody or functional fragment thereof is a mouse, a chimeric, a humanized, or a fully human monoclonal antibody; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain, said VH domain comprising an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2, residues 20-142 of SEQ ID NO: 6, residues 20-142 of SEQ ID NO: 10, and residues 20-145 of SEQ ID NO: 14; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable light chain (VL) domain, said VL domain comprising an amino acid sequence selected from the group consisting of residues 20-130 of SEQ ID NO: 4, residues 20-129 of SEQ ID NO: 8, residues 20-130 of SEQ ID NO: 12, and residues 23-130 of SEQ ID NO: 16; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a variable heavy chain (VH) domain and a variable light chain (VL) domain, where said VH domain and said VL domain respectively comprise an amino acid sequence selected from the group consisting of residues 20-142 of SEQ ID NO: 2 and residues 20-130 of SEQ ID NO: 4; residues 20-142 of SEQ ID NO: 6 and residues 20-129 of SEQ ID NO: 8; residues 20-142 of SEQ ID NO: 10 and residues 20-130 of SEQ ID NO: 12; and residues 20-145 of SEQ ID NO: 14 and residues 23-130 of SEQ ID NO: 16; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region comprising three complementarity determining regions (CDRs) having the amino acid sequence of the three heavy chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB- 8059, and a light chain variable region comprising three CDRs having the amino acid sequence of the three light chain variable region CDRs according to Kabat numbering of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain variable region consisting of the amino acid sequence of the heavy chain variable region of an antibody produced by a hybridoma deposited under American Type Culture Collection (ATCC) Accession No. HB- 8059, and a light chain variable region consisting of the amino acid sequence of the light chain variable region of an antibody produced by a hybridoma deposited under ATCC Accession No. HB-8059; or wherein said anti-sLe^a antibody or functional fragment thereof comprises a heavy chain

consisting of the amino acid sequence of the heavy chain of an antibody produced by a hybridoma deposited under ATCC. Accession No. HB-8059, and a light chain consisting of the amino acid sequence of the light chain of an antibody produced by a hybridoma deposited under ATCC. Accession No. HB-8059.

11. The use of any one of claims 9 to 10, wherein said anti-sLe^a antibody functional fragment is selected from the group consisting of a Fab, a Fab', a F(ab')₂, a scFV, a diabody, a triabody, a minibody and a single-domain antibody (sdAB); wherein optionally said anti-sLe^a antibody or functional fragment thereof is a diabody; wherein optionally said diabody comprises the amino acid sequence of SEQ ID NO: 18 or 20; wherein optionally said anti-sLe^a antibody or functional fragment thereof is a monoclonal antibody; wherein optionally said anti-sLe^a antibody or functional fragment thereof is an IgG or IgM isotype; and wherein optionally said IgG antibody is an IgG1, IgG2, IgG3, or IgG4 subclass.

12. The use of any one of claims 9 to 11, wherein the anti-sLe^a antibody or functional fragment thereof is formulated as a pharmaceutical composition comprising a pharmaceutically acceptable carrier.

13. The use of any one of claims 9 to 12, wherein the antibody or functional fragment thereof is to be administered by a parenteral route of administration; wherein optionally the parenteral administration is selected from a group consisting of subcutaneous injection, intramuscular injection, and intravenous injection; wherein optionally the antibody or functional fragment thereof is to be administered at a dose range from about 0.1 mg/kg/dose to about 10 mg/kg/dose; wherein optionally the antibody or functional fragment thereof is to be administered weekly, bi-weekly, monthly, or bi-monthly; and wherein optionally the antibody or functional fragment thereof is to be administered for about one, two, three, four, five, or six months.

14. The use of claims 7 to 8, wherein the therapeutic agent is a peptide or peptidomimetic molecule; and wherein optionally the peptide or peptidomimetic has the property of specifically binding to Sialyl-Lewis^a.

15. The use of any one of claims 1 to 14, wherein the pancreatitis is characterized by one or more markers.

16. The use of any one of claims 2 to 6, 8 to 15, wherein the severity of the pancreatitis is determined by one or more markers.

17. The use of any one of claims 1 to 16, wherein the subject has elevated levels of one or more markers for pancreatitis; and wherein optionally the administration of the therapeutic agent results in reduced levels of one or more markers for pancreatitis in the subject.

18. The use of any one of claims 15 to 17, wherein the one or more markers are selected from a group consisting of a physiological marker, a histological marker, a serological marker, and a signaling marker; wherein optionally the histological marker is selected from a group consisting of immune cell invasion, collagen deposition, fibrotic tissue, fat necrosis, interstitial edema, acinar and blood vessel destruction, interstitial hemorrhage, ductal dilation, acinar cell homogenization, and expression level of CA19-9; wherein optionally the one or more markers comprise expression level of CA19-9; and wherein optionally the one or more markers are determined by immunohistochemistry.

19. The use of claim 18, wherein the serological marker is selected from a group consisting of serum lipase level, serum amylase level, and serum C reactive protein level; or wherein the serum lipase level is over 200 U/L; or wherein the serum amylase level is over 200 U/L; or wherein the serum amylase level is three times over the upper limit of normal serum amylase level of a control subject; or wherein the serum lipase level is three times over the upper limit of normal serum lipase level of a control subject.

20. The use of claim 16, wherein the physiological marker is selected from a group consisting of weight loss, malabsorption of food, pancreatic atrophy, pancreatic enlargement, pancreatic inflammation, and bile reflux.

21. Use of a therapeutic agent that specifically binds to sLe^a in the manufacture

of a medicament for preventing, treating, ameliorating, or managing pancreatitis in a subject having elevated pancreatic sLe^a.

22. The use of any one of claims 1 to 21, wherein the pancreatitis is a pancreatitis selected from a group consisting of chronic pancreatitis and acute pancreatitis; wherein optionally the chronic pancreatitis is selected from a group consisting of mild chronic pancreatitis, moderate chronic pancreatitis, and severe chronic pancreatitis; and wherein optionally the acute pancreatitis is selected from a group consisting of mild acute pancreatitis, moderate acute pancreatitis, and severe acute pancreatitis.

23. The use of any one of claims 1 to 22, wherein the subject is a mammal; and wherein optionally the mammal is a human.