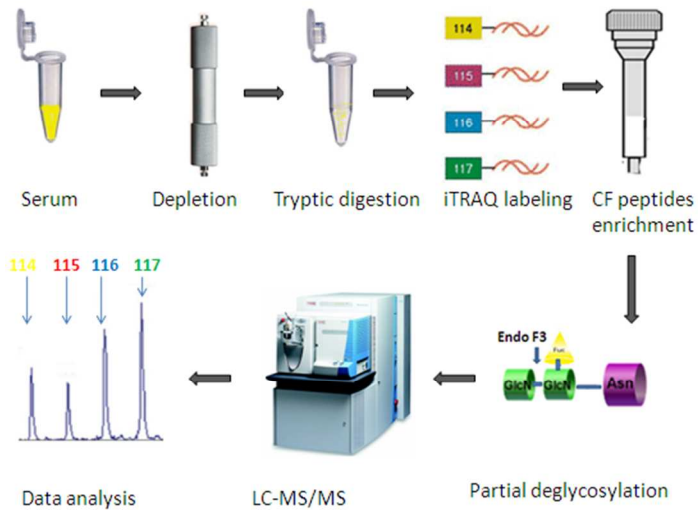


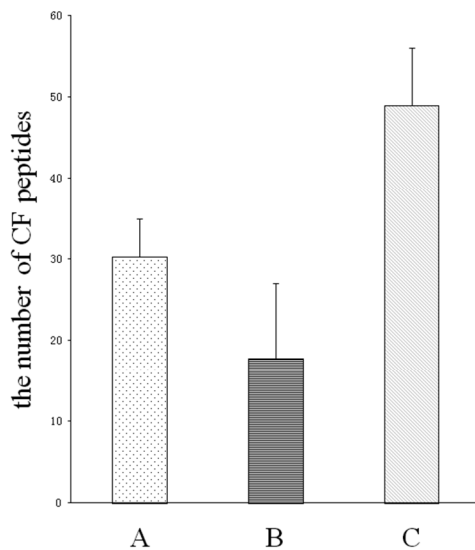
Supplemental information

1. Workflow of this study



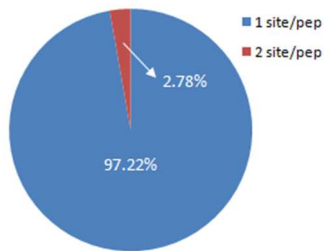
Supplemental figure 1. Workflow diagram showing experimental process used in large scale identification of CF sites in pancreatic cancer serum. The iTRAQ tag 114 was assigned to the standard reference and iTRAQ tags 115, 116, 117 were assigned randomly to healthy controls, chronic pancreatitis and pancreatic cancer in 13 sample sets.

2.



Supplemental figure 2, A comparison of the number of CF peptides resulting from different elution buffer strategies. A, LCA slurry mixture eluting with regular elution buffer including NaCl, Ca²⁺ and Mn²⁺; B, additional elution buffer without NaCl, Ca²⁺ and Mn²⁺ after regular elution buffer; C, LCA slurry eluted by regular elution buffer first followed by additional elution buffer. Data represent the mean and all error bars represent the standard deviation (n=3).

3. Supplemental figure 3. The distribution of CF sites in glycopeptides identified in pancreatic cancer serum with single and double CF sites



4.

Supplemental table 1. Diagnostic ions frequency and percent in 274 candidate CF peptides from one run mass spectra

Diagnostic ion	126.055	138.055	186.066	204.087
frequency	272	199	170	256
Percent	99.3%	72.6%	62.0%	93.4%

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Supplemental table 2. Different patterns of diagnostic ions in candidate CF peptides from one run mass spectrum

Pattern of diagnostic ion	Number
None	2
126.055	6
126.055, 138.055	2
126.055, 204.087	27
126.055, 138.055, 204.087	59
126.055, 186.066, 204.087	8
126.055, 138.055, 186.066, 204.087	170
Other patterns	0

6.

Supplemental table 3. Identified 630 CF sites in 613 CF peptides (see separate file)

7.

Supplemental table 4. All CF proteins *p* values derived from GO analysis

Term	<i>p</i> value (-lg)
acute inflammatory response	39
response to wounding	38
complement activation	30
activation of plasma proteins involved in acute inflammatory response	30
inflammatory response	26
complement activation, classical pathway	24
humoral immune response	23
immune effector process	22
positive regulation of immune system process	21
defense response	21
activation of immune response	21
immune response	21
positive regulation of immune response	20
positive regulation of response to stimulus	20
hemostasis	18
leukocyte mediated immunity	17
B cell mediated immunity	17
innate immune response	17
adaptive immune response	17
lymphocyte mediated immunity	16
regulation of body fluid levels	16
regulation of response to external stimulus	14

regulation of cell motion	13
regulation of cell migration	12
regulation of locomotion	11
regulation of blood coagulation	10
proteolysis	10
acute-phase response	10
regulation of coagulation	10
complement activation, alternative pathway	8
negative regulation of blood coagulation	8
regulation of protein maturation by peptide bond cleavage	8
regulation of protein processing	8
negative regulation of coagulation	8
cell-cell adhesion	8
cell motion	7
regulation of fibrinolysis	7
cell-substrate adhesion	6
cell migration	6
cell motility	6
localization of cell	6
positive regulation of blood coagulation	6
fibrinolysis	6
regulation of inflammatory response	6
regulation of acute inflammatory response	6
positive regulation of coagulation	6
positive regulation of cell motion	6
substrate adhesion-dependent cell spreading	5
positive regulation of cell migration	5
positive regulation of locomotion	5
negative regulation of protein maturation by peptide bond cleavage	5
extracellular matrix organization	4
enzyme linked receptor protein signaling pathway	4
negative regulation of proteolysis	4
regulation of humoral immune response	4
negative regulation of angiogenesis	4
regulation of proteolysis	4
extracellular structure organization	4
negative regulation of multicellular organismal process	4
blood vessel development	4
negative regulation of immune response	4
vasculature development	4
negative regulation of endothelial cell migration	4
negative regulation of fibrinolysis	4
negative regulation of response to stimulus	4
regulation of cell proliferation	4
negative regulation of immune effector process	4

cell morphogenesis	4
cell-matrix adhesion	3
regulation of cell adhesion	3
transmembrane receptor protein tyrosine kinase signaling pathway	3
regulation of leukocyte migration	3
cytolysis	3
neuron recognition	3
glycosaminoglycan metabolic process	3
cell recognition	3
positive regulation of cell communication	3
heterophilic cell adhesion	3
cellular component morphogenesis	3
regulation of immune effector process	3
axonal fasciculation	3
negative regulation of cell migration	3
blood vessel morphogenesis	3
positive regulation of multicellular organismal process	3
cell morphogenesis involved in differentiation	3
negative regulation of complement activation	3
regulation of complement activation	3
negative regulation of immune system process	3
negative regulation of locomotion	3
positive regulation of cell proliferation	3
regulation of endothelial cell migration	3
negative regulation of cell motion	3
regulation of angiogenesis	3
positive regulation of response to external stimulus	3
aminoglycan metabolic process	3
positive regulation of cell differentiation	3
regulation of behavior	3
positive regulation of signal transduction	3
leukocyte adhesion	3
positive regulation of fibrinolysis	3
negative regulation of humoral immune response	3
positive regulation of chemotaxis	3
neuron development	3
positive regulation of leukocyte migration	3
cellular iron ion homeostasis	3
regulation of chemotaxis	3
positive regulation of developmental process	3
regulation of endothelial cell proliferation	2
receptor-mediated endocytosis	2
ciliary neurotrophic factor-mediated signaling pathway	2
positive regulation of behavior	2
neuron projection development	2

regulation of adaptive immune response	2
negative regulation of endothelial cell proliferation	2
leukocyte migration	2
negative regulation of defense response	2
iron ion homeostasis	2
regulation of cellular protein metabolic process	2
cell projection organization	2
positive regulation of cell activation	2
polysaccharide metabolic process	2
positive regulation of T cell proliferation	2
regulation of T cell mediated immunity	2
cell projection morphogenesis	2
negative regulation of cellular protein metabolic process	2
negative regulation of cell adhesion	2
triglyceride metabolic process	2
growth	2
cell-substrate junction assembly	2
negative regulation of protein metabolic process	2
endocytosis	2
membrane invagination	2
positive regulation of phosphorylation	2
cell part morphogenesis	2
neuron differentiation	2
regulation of leukocyte mediated cytotoxicity	2
zymogen activation	2
hyaluronan metabolic process	2
low-density lipoprotein particle remodeling	2
regulation of T cell mediated cytotoxicity	2
positive regulation of phosphorus metabolic process	2
positive regulation of phosphate metabolic process	2
homophilic cell adhesion	2
acylglycerol metabolic process	2
positive regulation of leukocyte chemotaxis	2
response to hypoxia	2
neutral lipid metabolic process	2
positive regulation of T cell activation	2
regulation of cell killing	2
glycerol ether metabolic process	2
positive regulation of leukocyte activation	2
vascular endothelial growth factor receptor signaling pathway	2
regulation of leukocyte chemotaxis	2
organic ether metabolic process	2
response to nutrient	2
regulation of protein amino acid phosphorylation	2
response to oxygen levels	2

regulation of lymphocyte mediated immunity	2
regulation of smooth muscle cell migration	2
positive regulation of adaptive immune response	2
regulation of tyrosine phosphorylation of STAT protein	2
regulation of adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	2
positive regulation of lymphocyte proliferation	2
lipid transport	2
positive regulation of mononuclear cell proliferation	2
positive regulation of leukocyte proliferation	2
negative regulation of cell communication	2
neuron projection morphogenesis	2
platelet activation	2
cell activation	2
regulation of programmed cell death	2
regulation of cell death	2
response to extracellular stimulus	2
negative regulation of signal transduction	2
glycosaminoglycan catabolic process	2
positive regulation of protein amino acid phosphorylation	2
regulation of leukocyte mediated immunity	2
cell growth	2
regulation of T cell proliferation	1
regulation of JAK-STAT cascade	1
lipid localization	1
regulation of nervous system development	1
axonogenesis	1
membrane organization	1
branching morphogenesis of a tube	1
endothelial cell differentiation	1
protein-chromophore linkage	1
regulation of cytokine-mediated signaling pathway	1
positive regulation of protein maturation by peptide bond cleavage	1
kinin cascade	1
Factor XII activation	1
extracellular matrix disassembly	1
regulation of complement activation, lectin pathway	1
plasma kallikrein-kinin cascade	1
negative regulation of complement activation, lectin pathway	1
regulation of cellular extravasation	1
regulation of plasminogen activation	1
blood coagulation, intrinsic pathway	1
response to nutrient levels	1
positive regulation of lymphocyte activation	1
regulation of apoptosis	1

response to organic substance	1
regulation of tyrosine phosphorylation of Stat3 protein	1
antigen processing and presentation of peptide antigen via MHC class I	1
regulation of peptidyl-tyrosine phosphorylation	1
di-, tri-valent inorganic cation homeostasis	1
vasculogenesis	1
positive regulation of epithelial cell proliferation	1
cell junction assembly	1
regeneration	1
eye morphogenesis	1
regulation of cell development	1
cytokine-mediated signaling pathway	1
regulation of epithelial cell proliferation	1
regulation of osteoblast differentiation	1
cell morphogenesis involved in neuron differentiation	1
regulation of positive chemotaxis	1
positive regulation of positive chemotaxis	1
cation homeostasis	1
BMP signaling pathway	1
regulation of cell activation	1
morphogenesis of a branching structure	1
plasma lipoprotein particle remodeling	1
protein-lipid complex remodeling	1
macromolecular complex remodeling	1
regulation of axon extension	1
negative regulation of T cell mediated cytotoxicity	1
regulation of tyrosine phosphorylation of Stat1 protein	1
interleukin-6-mediated signaling pathway	1
negative regulation of cell killing	1
negative regulation of leukocyte mediated cytotoxicity	1
positive regulation of tyrosine phosphorylation of Stat1 protein	1
cellular cation homeostasis	1
aminoglycan catabolic process	1
eye photoreceptor cell differentiation	1
regulation of ossification	1
response to cytokine stimulus	1
angiogenesis	1
positive regulation of tyrosine phosphorylation of STAT protein	1
chemical homeostasis	1
regulation of axon extension involved in axon guidance	1
triglyceride mobilization	1
negative regulation of axon extension involved in axon guidance	1
retinal rod cell development	1
blood vessel maturation	1
elastic fiber assembly	1

negative regulation of innate immune response	1
plasminogen activation	1
cellular di-, tri-valent inorganic cation homeostasis	1
regulation of T cell activation	1
antigen processing and presentation	1
regulation of lymphocyte proliferation	1
regulation of leukocyte proliferation	1
regulation of mononuclear cell proliferation	1
response to steroid hormone stimulus	1
photoreceptor cell differentiation	1
positive regulation of osteoblast differentiation	1
positive regulation of cellular protein metabolic process	1
regulation of innate immune response	1
hemopoiesis	1
positive regulation of JAK-STAT cascade	1
positive regulation of myoblast differentiation	1
negative regulation of protein amino acid autophosphorylation	1
peptide catabolic process	1
membrane to membrane docking	1
blood coagulation, extrinsic pathway	1
negative regulation of cell proliferation	1
regulation of cell projection organization	1
homeostatic process	1
cell junction organization	1
T cell activation	1