

ONLINE SUPPLEMENTARY DATA

Supplementary Table 1. Cytokines, chemokines and growth factors measured by multiplexed bead-based Luminex assay.

EGF	IL-12p40	IL-5	PDGF-AA
Eotaxin (CCL11)	IL-12p70	IL-6	PDGF-AB/BB
FGF-2	IL-13	IL-7	RANTES (CCL5)
Flt-3 ligand	IL-15	IL-8 (CXCL8)	TGF- α
Fractalkine (CX3CL1)	IL-17A	IL-9	TNF- α
G-CSF	IL-1RA	IP-10 (CXCL10)	TNF- β
GM-CSF	IL- 1α	MCP-1 (CCL2)	VEGF
GRO (CXCL1)	IL- 1β	MCP-3 (CCL7)	sCD40L
IFN- α2	IL-2	MDC (CCL22)	CXCL4 (PF4)
IFN- γ	IL-3	MIP- 1α (CCL3)	CRP
IL-10	IL-4	MIP- 1β (CCL4)	L-selectin

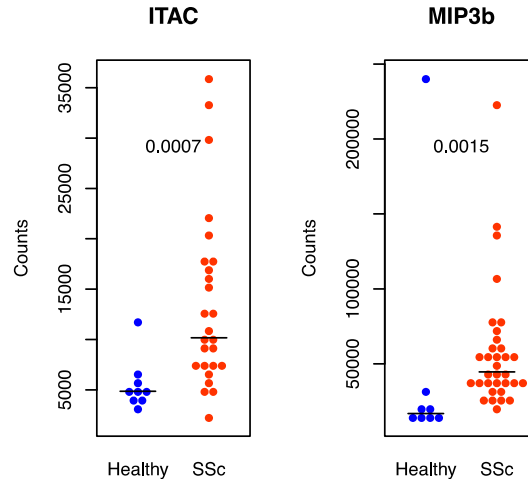
Supplementary Table 2. SSc-associated antigens printed on microarray.

Antigen	Vendor	Cat No.
b2GP I	Diarect	A14901
Cardiolipin	Sigma	C0563
CENP A	Diarect	A16901
CENP B	Diarect	A16901
Collagen I	MBL	JM-4796-10
Collagen V	Abcam	ab7537
EBV EBNA-1	Prospec	EBV-276
Fibrallarin	Ray Biotech	228-12583-2
IL-6	Ebiosciences	14-8069-62
Ku 70	Abnova	H00002547-P01
La/SSB	Diarect	A12801
MPO	Arotech	ATM01-10
NPM1 (B23)	BioVision Inc	7258-20
PDGFR-B	Sino Biological	10514-H08H
PM/Scl 100	Diarect	A16001
PM/Scl 75	Diarect	test lot 1137/2
PR3	Diarect	18601
RNA Pol III	Fitzgerald	80R-2507
Ro52	Diarect	A12701
Scl-70 full	Diarect	A12401
Scl-70 processed	Diarect	A14501
Sp 100	Diarect	A18901
TPO (Thyropoxidase)	Diarect	A12101
U1-snRNP 68 protein	Diarect	A13001
U1-snRNP A protein	Diarect	A13101
U1-snRNP C protein	Diarect	A13201
U11/U12 RNP	Abnova	H00011066-P01
Whole Histone	Immunovision	HIS-1000
GAH IgG control	Jackson Immuno	109-005-098

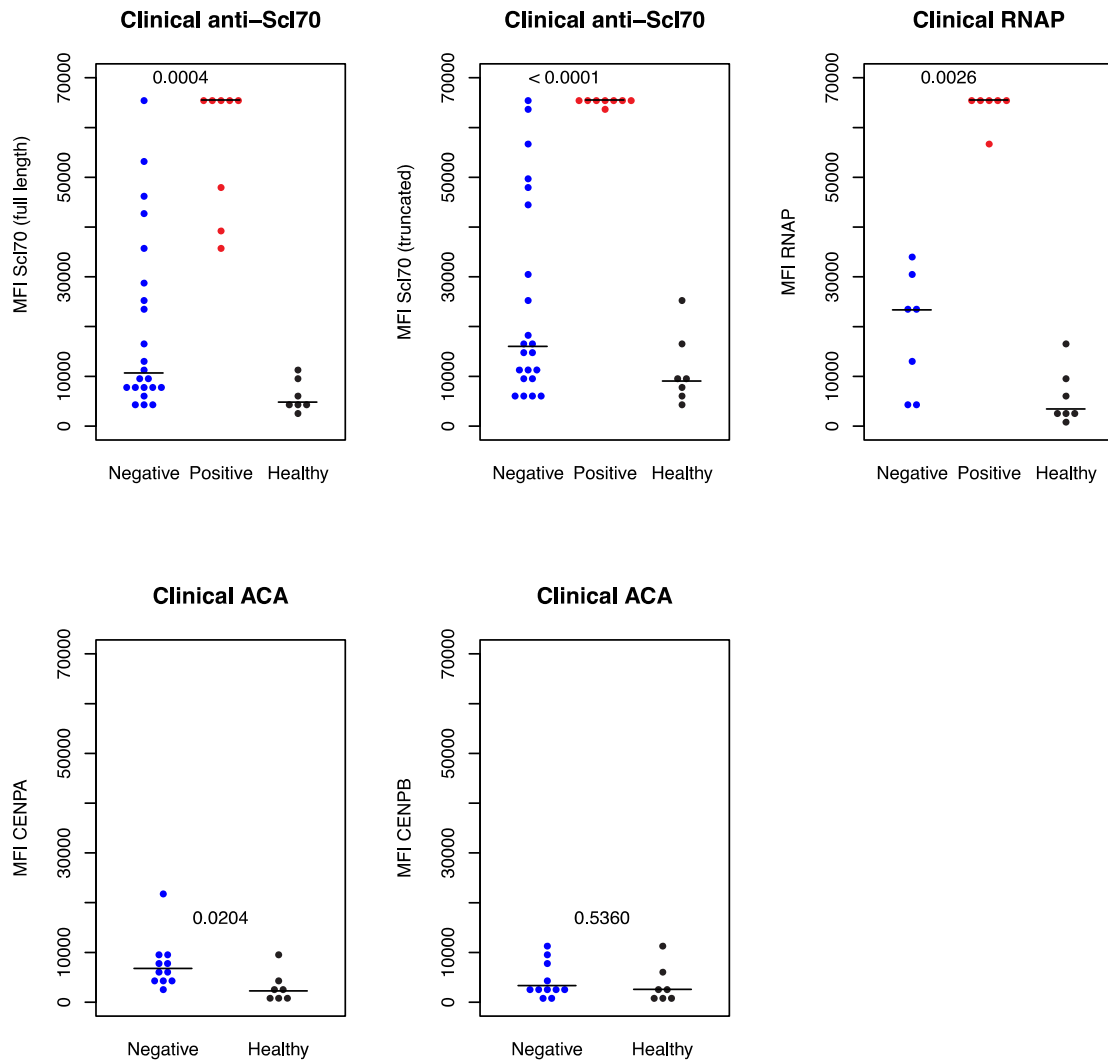
Supplementary Table 3. Baseline clinical variables used as input for elastic net algorithm.

Age	SF36 (short form 36 health survey)*
Gender	VAS (visual analog scale)
Race/ethnicity	RNAP (RNA polymerase III antibody)
Disease duration	ANA (antinuclear antibody)
FVC (forced vital capacity)	ACA (anticentromere antibody) [†]
DLCO (diffusing capacity of the lung for CO [‡])	Scl-70
Hgb (hemoglobin)	MRSS (modified Rodnan skin score)
PLT (platelet count)	ILD (interstitial lung disease)
WBC (white blood cell count)	Ulcers
ESR (erythrocyte sedimentation rate)	Arthritis
CPK (creatine phosphokinase)	Renal
PGA (physician global assessment)	GI (gastrointestinal)
SHAQ (scleroderma HAQ [#])	Tendon

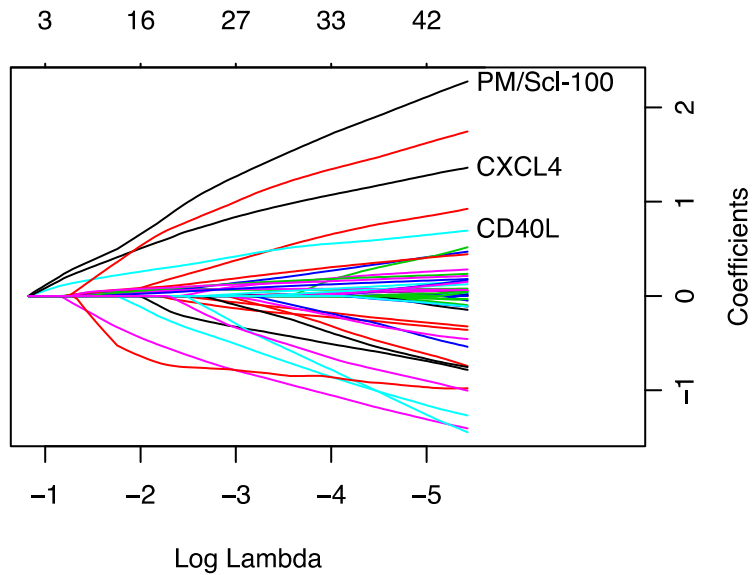
*Mental and physical components were included separately. [†]ACA measurements were removed prior to imputation, as they were only measured for 8 individuals in the imatinib trial. [‡]Carbon monoxide, [#]health assessment questionnaire.



Supplementary Figure 1. Increased levels of interferon-related inflammatory chemokines in the sera of dcSSc patients. The levels of ITAC and MIP3B in the baseline sera of individuals with dcSSc and healthy controls were measured by capture ELISA. Bars represent the group medians. Mann-Whitney tests were used to compare groups, and p-values are shown on each plot.



Supplementary Figure 2. Comparison of clinical autoantibody tests with autoantigen microarray results. Patients were divided based on Scl-70, Anti-centromere antibodies (ACA) and RNA Pol III (RNAP) clinical antibody test results at time of sampling, and autoantigen microarray values for the corresponding autoantigens were plotted to test the agreement between platforms. ACA and RNA Pol III tests were only performed on subsets of patients. The p-values of Mann-Whitney tests are shown on each plot. Reactivity to CENP-A and -B was expected to be low, as all patients tested had dcSSc.



Supplementary Figure 3. Trace plot of coefficients fit by elastic net. Lines corresponding to coefficients of variables used in the signature are labeled on the right. Number of variables (at a given penalty value) are shown on the upper x-axis.