

Supplemental material online

Supplemental tables

Table I online.- Clinical characteristics of patients from the VIVA trial

	N= 186	All AAA (%)	Small AAA (%)	Large AAA (%)
1st degree relative with AAA	15	8.4	8.5	8.0
Current smokers	76	42.5	47.4	36.4
Diabetes	15	8.4	4.2	12.5
Hypertension	95	53.4	50.5	52.4
Use of ACE-inhibitors	45	26.0	24.7	29.8
Use of beta-blocker	61	35.5	31.9	40.0
Statin	93	52.8	51.6	57.5
Low dose aspirin	84	48.3	44.6	54.7
Peripheral arterial disease (PAD)	40	22.3	22.1	21.6
Intermittent claudication	35	20.1	17.9	21.7
Previous AMI	44	25.4	25.3	27.7
Current angina pectoris:	25	14.4	14.7	16.9
	Mean	SD	Mean (SD)	Mean (SD)
Age (years)	69.66	2.91	69.4 (2.9)	70.0(2.8)
Body mass index (BMI)	27.60	3.54	27.6(3.6)	27.6 (3.5)
Systolic blood pressure (mmHg)	154.30	21.67	156 (22.7)	152(20.5)
Diastolic bloodpressure (mmHg)	88.40	12.00	88.3(12.3)	88.5(11.8)
Lowest ABI	0.96	0.17	0.95(0.18)	0.96(0.15)
Maximal aortic diameter (mm)	48.75	15.42	37.0(5.18)	70.0(2.84)
Aneurysmal growth rate (mm/year)	3.10	2.95	2.98(2.77)	5.97(2.84)

ABI: Ankle brachial bloodpressure index

AMI: Acute myocardial infarction

Table II online.- Proteins identified by LTQ-Orbitrap mass spectrometry

Uniprot Code	Protein Name	Secretory Predictions *
A4D0S4	Laminin subunit beta-4	S
A5D8V7	Coiled-coil domain-containing protein 151	S
A6NJS3	Putative V-set and immunoglobulin domain	S
A8K8V0	Zinc finger protein 785	S
B2RMS9	Inter-alpha (Globulin) inhibitor H4 (Plasma Kallikrein-sensitive glycoprotein)	S
D6RAK8	Vitamin D-binding protein	S
E9PQD6	Serum amyloid A protein	S
F6THE9	Butyrophilin-like protein 2	NC
G3V0G4	2-aminoadipic 6-semialdehyde dehydrogenase, isoform CRA_c	S
I3L499	Patched domain-containing protein 3	NC
O00400	Acetyl-coenzyme A transporter 1	NC
O00574	C-X-C chemokine receptor type 6	NC
O14672	Disintegrin and metalloproteinase domain-containing protein 10	S
O14744	Protein arginine N-methyltransferase 5	NC
O14994	Synapsin-3	S
O15264	Mitogen-activated protein kinase 13	NC
O15466	Alpha-2,8-sialyltransferase 8E	S
O43749	Olfactory receptor 1F1	S
O60508	Pre-mRNA-processing factor 17	S
O60673	DNA polymerase zeta catalytic subunit	S
O60885	Bromodomain-containing protein 4	NC
O75179	Ankyrin repeat domain-containing protein 17	S
O75385	Serine/threonine-protein kinase ULK1	NC
O75920	Small EDRK-rich factor 1	NC
O75970	Multiple PDZ domain protein	S
O94776	Metastasis-associated protein MTA2	NC
O95218	Zinc finger Ran-binding domain-containing protein 2	NC
O95477	ATP-binding cassette sub-family A member 1	S
O95831	Apoptosis-inducing factor 1, mitochondrial	S
P00450	Ceruloplasmin	S
P00734	Prothrombin	S
P00738	Haptoglobin	S
P00747	Plasminogen	S
P00846	ATP synthase subunit a	NC
P01011	Alpha-1-antichymotrypsin	S
P01023	Alpha-2-macroglobulin	S
P01024	Complement C3	S
P01042	Kininogen-1	S
P01583	Interleukin-1 alpha	S

P02042	Hemoglobin subunit delta	NC
P02647	Apolipoprotein A-I	S
P02649	Apolipoprotein E	S
P02652	Apolipoprotein A-II	S
P02656	Apolipoprotein C-III	S
P02671	Fibrinogen alpha chain	NC
P02675	Fibrinogen beta chain	NC
P02679	Fibrinogen gamma chain	S
P02743	Serum amyloid P-component	S
P02748	Complement component C9	S
P02749	Beta-2-glycoprotein 1	S
P02751	Fibronectin	S
P02760	Protein AMBP	S
P02763	Alpha-1-acid glycoprotein 1	S
P02768	Serum albumin	S
P02786	Transferrin receptor protein 1	S
P02787	Serotransferrin	S
P02790	Hemopexin	S
P02792	Ferritin light chain	NC
P02794	Ferritin heavy chain	S
P03891	NADH-ubiquinone oxidoreductase chain 2	NC
P03999	Short-wave-sensitive opsin 1	NC
P04040	Catalase	NC
P04114	Apolipoprotein B-100	S
P04196	Histidine-rich glycoprotein	NC
P04217	Alpha-1B-glycoprotein	S
P05155	Plasma protease C1 inhibitor	S
P06396	Gelsolin	S
P06703	Protein S100-A6	S
P07305	Histone H1.0	NC
P07951	Tropomyosin beta chain	NC
P07996	Thrombospondin-1	NC
P08294	Extracellular superoxide dismutase [Cu-Zn]	S
P08670	Vimentin	S
P0C0L4	Complement C4-A	S
P0C0L5	Complement C4-B	S
P10636	Microtubule-associated protein tau	NC
P10828	Thyroid hormone receptor beta	S
P10909	Clusterin	S
P11487	Fibroblast growth factor 3	S
P12259	Coagulation factor V	S
P13688	Carcinoembryonic antigen-related cell adhesion molecule 1	S
P16499	Rod cGMP-specific 3',5'-cyclic phosphodiesterase subunit alpha	NC
P16860	Natriuretic peptides B	S

P17980	26S protease regulatory subunit 6A	NC
P20273	B-cell receptor CD22	S
P20339	Ras-related protein Rab-5A	S
P22557	5-aminolevulinate synthase, erythroid-specific, mitochondrial	S
P22670	MHC class II regulatory factor RFX1	S
P22792	Carboxypeptidase N subunit 2	S
P23142	Fibulin-1	S
P24530	Endothelin B receptor	NC
P26006	Integrin alpha-3	S
P27482	Calmodulin-like protein 3	S
P29144	Tripeptidyl-peptidase 2	NC
P29218	Inositol monophosphatase 1	S
P31327	Carbamoyl-phosphate synthase [ammonia], mitochondrial	S
P32119	Peroxiredoxin-2	NC
P35221	Catenin alpha-1	NC
P35228	Nitric oxide synthase, inducible	S
P35626	Beta-adrenergic receptor kinase 2	NC
P36980	Complement factor H-related protein 2	S
P37231	Peroxisome proliferator-activated receptor gamma	S
P40429	60S ribosomal protein L13a	S
P41134	DNA-binding protein inhibitor ID-1	S
P43652	Afamin	NC
P46100	Transcriptional regulator ATRX	S
P46977	Dolichyl-diphosphooligosaccharide glycosyltransferase subunit STT3A protein	NC
P47224	Guanine nucleotide exchange factor MSS4	NC
P47989	Xanthine dehydrogenase/oxidase	NC
P48637	Glutathione synthetase	S
P49321	Nuclear autoantigenic sperm protein	NC
P49418	Amphiphysin	NC
P49815	Tuberin	NC
P49916	DNA ligase 3	S
P50416	Carnitine O-palmitoyltransferase 1, liver isoform	S
P51580	Thiopurine S-methyltransferase	NC
P51826	AF4/FMR2 family member 3	S
P51884	Lumican	NC
P52737	Zinc finger protein 136	S
P54132	Bloom syndrome protein	NC
P59923	Zinc finger protein 445	S
P60709	Actin, cytoplasmic 1	NC
P63010	AP-2 complex subunit beta	NC
P68873	Hemoglobin subunit beta	NC
P69891	Hemoglobin subunit gamma-1	NC
P69905	Hemoglobin subunit alpha	NC

P80192	Mitogen-activated protein kinase kinase kinase 9	S
P82673	28S ribosomal protein S35, mitochondrial	S
P98160	Basement membrane-specific heparan sulfate proteoglycan core protein	S
Q01524	Defensin-6	S
Q04446	1,4-alpha-glucan-branching enzyme	S
Q04725	Transducin-like enhancer protein 2	S
Q06710	Paired box protein Pax-8	NC
Q07020	60S ribosomal protein L18	NC
Q07954	Prolow-density lipoprotein receptor-related protein 1	S
Q08379	Golgin subfamily A member 2	NC
Q08ER8	Zinc finger protein 543	S
Q12788	Transducin beta-like protein 3	S
Q12797	Aspartyl/asparaginyl beta-hydroxylase	NC
Q13017	Rho GTPase-activating protein 5	S
Q13108	Melanoma ubiquitous mutated protein	S
Q13114	TNF receptor-associated factor 3	NC
Q13402	Unconventional myosin-VIIa	S
Q13683	Integrin alpha-7	S
Q14004	Cyclin-dependent kinase 13	NC
Q14767	Latent-transforming growth factor beta-binding protein 2	S
Q14789	Golgin subfamily B member 1	NC
Q15063	Periostin	S
Q15067	Peroxisomal acyl-coenzyme A oxidase 1	NC
Q15431	Synaptonemal complex protein 1	NC
Q15528	Mediator of RNA polymerase II transcription subunit 22	NC
Q16666	Gamma-interferon-inducible protein 16	NC
Q4J6C6	Prolyl endopeptidase-like	NC
Q4KMG0	Cell adhesion molecule-related/down-regulated by oncogenes	S
Q53FM8	Fucose-1-phosphate guanyltransferase variant	NC
Q53G59	Kelch-like protein 12	S
Q53WY6	Transthyretin	S
Q59ER9	B aggressive lymphoma gene variant	NC
Q59FE5	A disintegrin and metalloproteinase with thrombospondin motifs 10	S
Q59H18	Serine/threonine-protein kinase TNKI3K	NC
Q5FWF5	N-acetyltransferase ESCO1	NC
Q5KSL6	Diacylglycerol kinase kappa	S
Q5T5U3	Rho GTPase-activating protein 21	NC
Q5T686	Arginine vasopressin-induced protein 1	S
Q5VT06	Centrosome-associated protein 350	NC
Q5VTL8	Pre-mRNA-splicing factor 38B	NC
Q5VV42	Threonylcarbamoyladenosine tRNA methylthiotransferase	S
Q5ZF01	Activating signal cointegrator 1 complex subunit 3-like 1	S

Q68CZ2	Tensin-3	NC
Q6IBW4	Condensin-2 complex subunit H2	NC
Q6P9A3	Zinc finger protein 549	S
Q6U7Q0	Zinc finger protein 322	S
Q6ZT12	E3 ubiquitin-protein ligase UBR3	S
Q70Z53	Protein FRA10AC1	NC
Q75T13	GPI inositol-deacylase	S
Q76176	Protein phosphatase Slingshot homolog 2	S
Q7Z4N2	Transient receptor potential cation channel subfamily M member 1	NC
Q7Z7C8	Transcription initiation factor TFIID subunit 8	NC
Q7Z7G8	Vacuolar protein sorting-associated protein 13B	NC
Q861H1	MHC class I antigen	S
Q86VE9	Serine incorporator 5	NC
Q86Z14	Beta-klotho	S
Q8IVE3	Pleckstrin homology domain-containing family H member 2	S
Q8IWQ3	Serine/threonine-protein kinase BRSK2	NC
Q8IXT1	Nitric oxide-inducible gene protein	S
Q8IY21	Probable ATP-dependent RNA helicase DDX60	S
Q8IYA6	Cytoskeleton-associated protein 2-like	NC
Q8IYF1	RNA polymerase II transcription factor SIII subunit A2	S
Q8IYI6	Exocyst complex component 8	NC
Q8IYM0	Protein FAM186B	NC
Q8N119	Matrix metalloproteinase-21	S
Q8NBP0	Tetratricopeptide repeat protein 13	S
Q8NE79	Blood vessel epicardial substance	S
Q8NEL9	Phospholipase DDHD1	NC
Q8NEN0	Armadillo repeat-containing protein 2	NC
Q8NF91	Nesprin-1	S
Q8NI22	Multiple coagulation factor deficiency protein 2	S
Q8TBF4	Zinc finger CCHC-type and RNA-binding motif-containing protein 1	S
Q8TD19	Serine/threonine-protein kinase Nek9	NC
Q8TEK3	Histone-lysine N-methyltransferase, H3 lysine-79 specific	NC
Q8WZ42	Titin	S
Q92794	Histone acetyltransferase KAT6A	NC
Q92876	Kallikrein-6	S
Q92994	Transcription factor IIIB 90 kDa subunit	S
Q93100	Phosphorylase b kinase regulatory subunit beta	NC
Q969Y0	NXPE family member 3	S
Q96DZ1	Endoplasmic reticulum lectin 1	S
Q96EB6	NAD-dependent protein deacetylase sirtuin-1	S
Q96EC4	AHNAK nucleoprotein	S
Q96I76	G patch domain-containing protein 3	NC
Q96J94	Piwi-like protein 1	S

Q96JS3	PiggyBac transposable element-derived protein 1	S
Q96NW4	Ankyrin repeat domain-containing protein 27	S
Q96P70	Importin-9	S
Q96Q83	Alpha-ketoglutarate-dependent dioxygenase alkB homolog 3	S
Q96RD9	Fc receptor-like protein 5	S
Q96RW7	Hemicentin-1	NC
Q96S42	Nodal homolog	S
Q96SU4	Oxysterol-binding protein-related protein 9	NC
Q96T58	Msx2-interacting protein	NC
Q99457	Nucleosome assembly protein 1-like 3	NC
Q9BVI0	PHD finger protein 20	S
Q9BWV1	Brother of CDO	S
Q9BYK8	Peroxisomal proliferator-activated receptor A	NC
Q9BZ29	Dedicator of cytokinesis protein 9	S
Q9BZF1	Oxysterol-binding protein-related protein 8	NC
Q9BZH6	WD repeat-containing protein 11	NC
Q9GZS0	Dynein intermediate chain 2, axonemal	NC
Q9H2D6	TRIO and F-actin-binding protein	S
Q9H2X9	Solute carrier family 12 member 5	NC
Q9H3L0	Methylmalonic aciduria and homocystinuria type D protein, mitochondrial	S
Q9H7D0	Dedicator of cytokinesis protein 5	NC
Q9H7X0	N-alpha-acetyltransferase 60	NC
Q9H9P8	L-2-hydroxyglutarate dehydrogenase, mitochondrial	S
Q9HAH1	Zinc finger protein 556	NC
Q9NPC7	Myoneurin	S
Q9NPI1	Bromodomain-containing protein 7	NC
Q9NQR4	Omega-amidase NIT2	S
Q9NQW7	Xaa-Pro aminopeptidase 1	S
Q9NS00	Glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase 1	S
Q9NU22	Midasin	NC
Q9NX55	Huntingtin-interacting protein K	S
Q9NYF8	Bcl-2-associated transcription factor 1	NC
Q9NYP7	Elongation of very long chain fatty acids protein 5	NC
Q9P0K1	Disintegrin and metalloproteinase domain-containing protein 22	S
Q9P212	1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase epsilon-1	NC
Q9P2K8	Eukaryotic translation initiation factor 2-alpha kinase 4	S
Q9P2N7	Kelch-like protein 13	S
Q9P2R3	Ankyrin repeat and FYVE domain-containing protein 1	NC
Q9UHC7	E3 ubiquitin-protein ligase makorin-1	S
Q9UKT4	F-box only protein 5	S
Q9ULV0	Unconventional myosin-Vb	S

Q9Y2G5	GDP-fucose protein O-fucosyltransferase 2	S
Q9Y4A5	Transformation/transcription domain-associated protein	S
Q9Y4D8	Probable E3 ubiquitin-protein ligase C12orf51	NC
Q9Y6D5	Brefeldin A-inhibited guanine nucleotide-exchange protein 2	S
Q9Y6J0	Calcineurin-binding protein cabin-1	S

* Secretory Predictions data provided by SecretomeP.1 Software (S: Classically secreted proteins; NC: Non-classically secreted proteins. Classically secreted: 155 proteins, 60% of total; Non-classically secreted: 102 proteins, 40% of total)

Table III online. Logistic regression analysis with AAA stage as dependent variable

a) First cohort

	B	SE	OR	P-value
(Constant)	-,931	3,842	,394	,808
Age	,089	,050	1,093	,075
Dyslipidemia	-,823	,733	,439	,261
Current smoking	1,094	,747	2,986	,143
Diabetes	-1,828	1,277	,161	,152
Hypertension	,533	,710	1,703	,453
Heart disease	-,862	,765	,422	,260
C3	-,042	,011	,959	,000

b) Second cohort

	B	SE	OR	P-value
(Constant)	26,759	7,499	4,2E11	,000
Sex	-,262	1,190	,769	,826
Age	-,242	,079	,785	,002
Dyslipidemia	,877	,959	2,404	,360
Current smoking	-1,567	1,176	,209	,183
Diabetes	-4,096	1,594	,017	,010
Hypertension	-,875	,979	,417	,372
Heart disease	1,247	1,099	3,479	,257
C3	-0,052	,019	,949	,007
AP50	-0,102	,036	,903	,005

c) Third cohort (VIVA trial)

	B	S.E.	OR	P-value
C3	-,013	,006	,987	,020
Body mass index (kg(m ²))	,017	,065	1,018	,787
Current smoking	-1,141	,449	,320	,011
Diabetes mellitus	,974	,977	2,647	,319
Diastolic blood pressure (mmHg)	,016	,017	1,016	,370
Peripheral arterial disease (ABI<0.9)	-,174	,525	,840	,740
Constant	6,173	4,619	479,459	,181

Table IV online. Linear regression analysis with AAA diameter as dependent variable

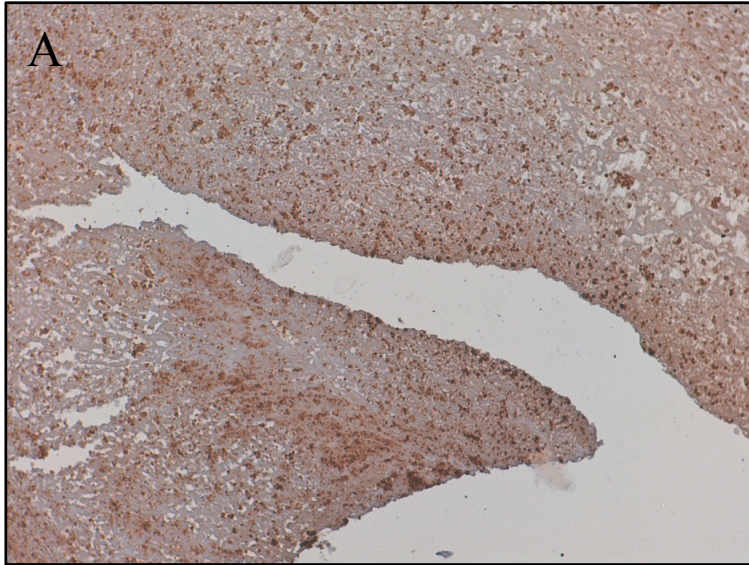
a) First cohort

Model	Coefficients(a)		Standardized Coefficients	T	Sig.
	Unstandardized Coefficients				
	B	Std. Error			
(Constant)	33,971	14,141		2,402	,019
Sex	4,482	5,693	,083	,787	,434
Age	,226	,165	,147	1,374	,173
Dyslipidemia	-3,303	2,280	-,165	-1,449	,152
Current smoking	5,251	2,242	,257	2,343	,022
Diabetes	-2,526	3,044	-,091	-,830	,409
Hypertension	,873	2,249	,042	,388	,699
Heart disease	-,138	2,402	-,006	-,057	,954
C3	-8,02E-02	,025	-,330	-3,247	,002

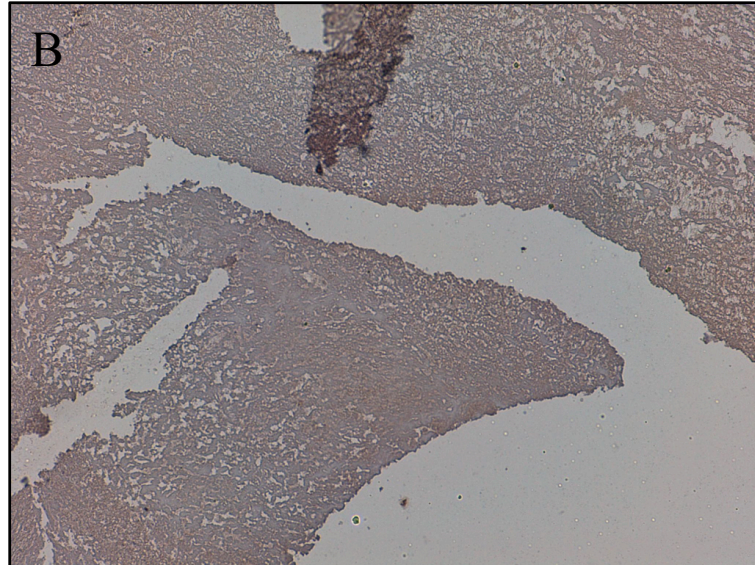
b) Second cohort

	Coefficients(a)				
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	99,069	15,968		6,204	,000
Sex	-2,562	7,550	-,045	-,339	,736
Age	-,408	,202	-,301	-2,024	,049
Dyslipidemia	-5,107	3,499	-,195	-1,459	,151
Current smoking	-2,918	4,295	-,098	-,679	,500
Diabetes	-5,968	4,717	-,177	-1,265	,212
Hypertension	1,253	3,775	,047	,332	,742
Heart disease	1,730	4,345	,057	,398	,692
AP50	-,133	,060	-,327	-2,230	,031

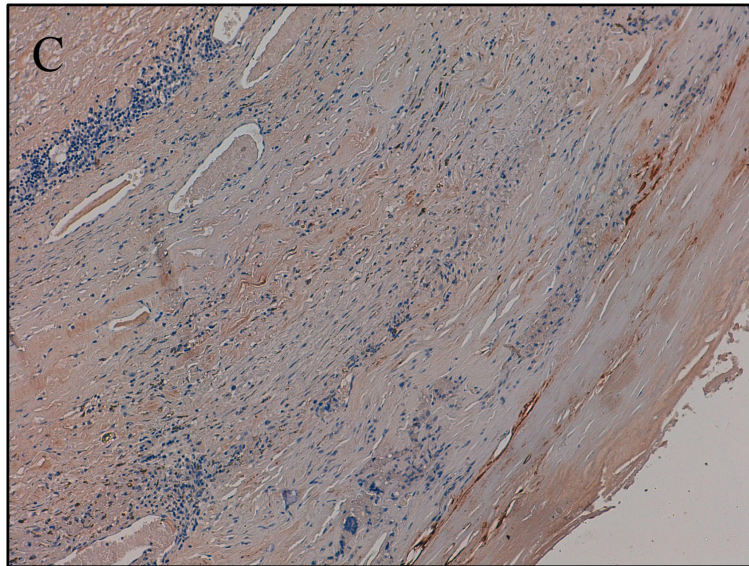
AAA thrombus



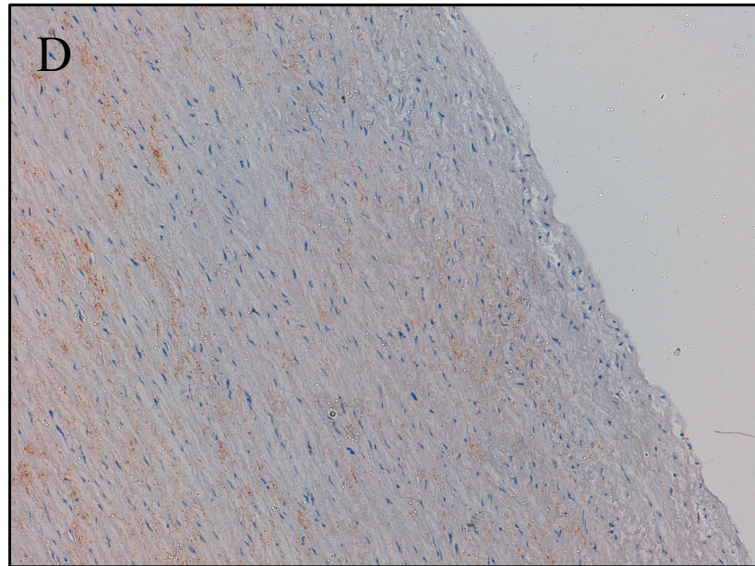
Negative



AAA wall

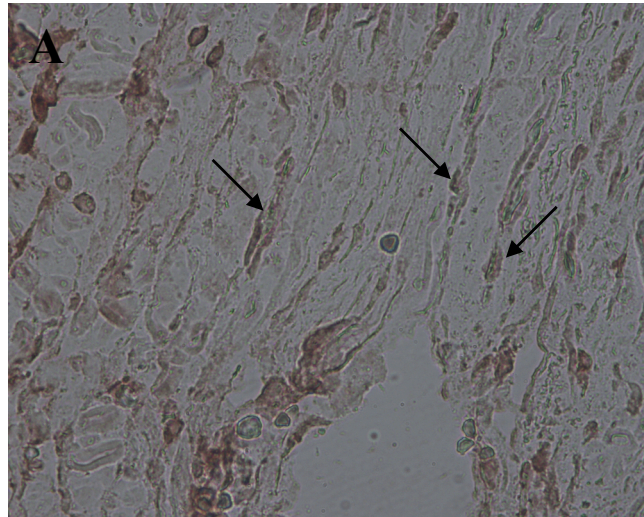


Healthy wall

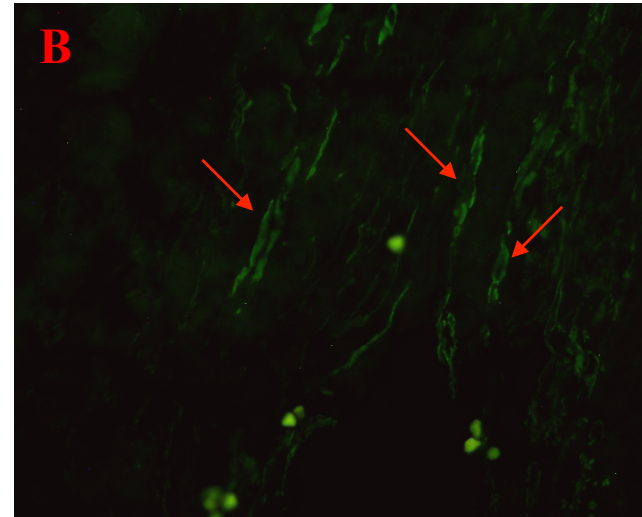


Supplemental figure I. Immunohistochemistry of C9 in thrombus (A), wall (C) and Healthy wall (D). Negative control (non-specific IgG) (B). Magnification 20x.

C3

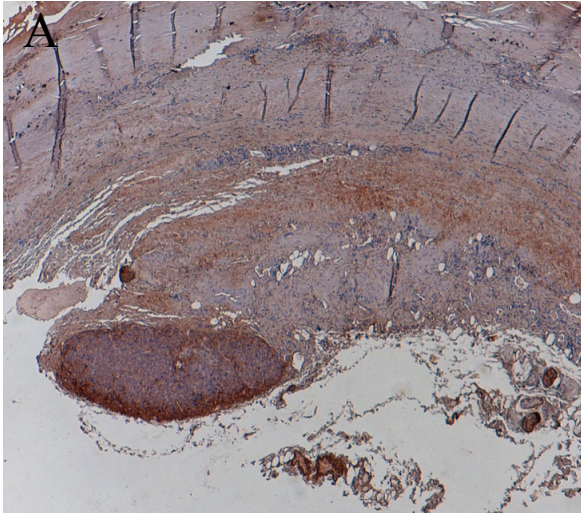


SMC

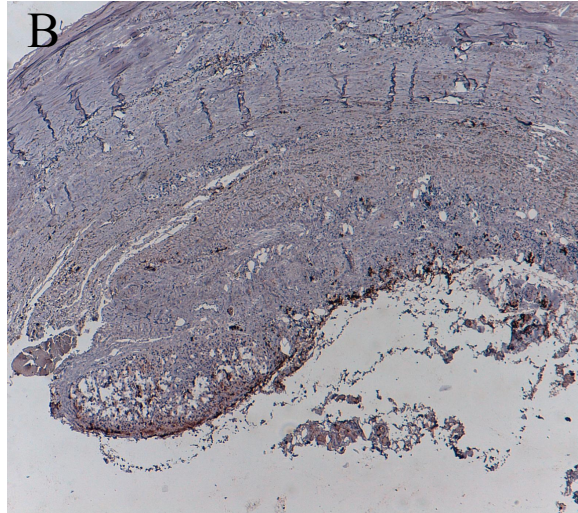


Supplemental figure II. Immunohistochemistry of C3 (A) and immunofluorescence of alpha-actin (B) in AAA wall. Magnification 40x.

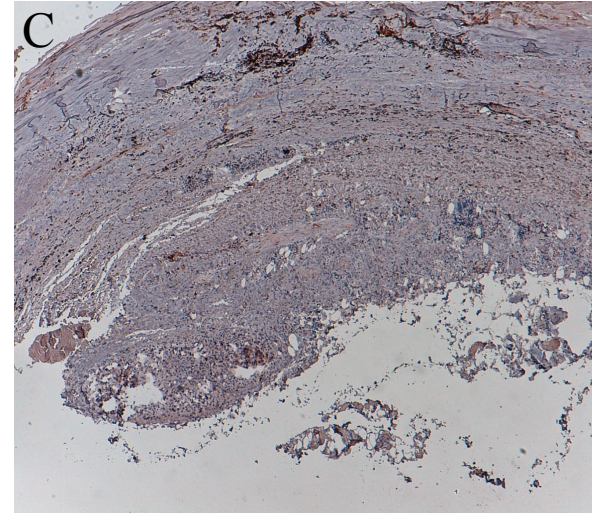
C3



CD15



CD68



Supplemental figure III. Immunohistochemistry of C3 (A), CD15 (B) and CD68 (C) in serial sections of AAA wall. Magnification 10x.