

An integrated *in silico* prediction and *in vivo* approach identifies NF-κB as master regulator in the rat model of chronic kidney disease

Shruti Tomar¹, Veena Puri², Seemha Rai¹, Ranbir Chander Sobti³, Parwati Pant¹, Sanjeev Puri³

¹Centre for Stem Cell, Tissue Engineering & Biomedical Excellence, Panjab University, Chandigarh, India.

²Centre for Systems Biology & Bioinformatics, Panjab University, Chandigarh, India.

³Department of Biotechnology, University Institute of Engineering and Technology, Panjab University, Chandigarh, India.

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SUPPLEMENTARY MATERIAL

Sheet 1- List of CKD genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24835	live	Tnf	RATTNF, TNF-alpha, Tnf	tumor necrosis factor	tumor necrosis factor cachectin tumor necrosis factor (TNF superfamily, member 2) tumor necrosis factor ligand superfamily member 2	20p12	20	NC_005119.4	5189382	5192000	minus	4
10116	Rattus norvegicus	29560	live	Hif1a	HIF1-alpha, MOP1	hypoxia inducible factor 1 subunit alpha	hypoxia-inducible factor 1-alpha HIF1 alpha hypoxia inducible factor 1 alpha subunit hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	6q24	6	NC_005105.4	96810868	96856303	plus	16
10116	Rattus norvegicus	59086	live	Tgfb1	Tgfb	transforming growth factor, beta 1	transforming growth factor beta-1 proprotein TGF-beta-1	1q21	1	NC_005100.4	82480875	82497196	plus	7
10116	Rattus norvegicus	24494	live	Il1b	IL-1F2	interleukin 1 beta	interleukin-1 beta IL-1 beta	3q36	3	NC_005102.4	121876256	121882637	minus	7
10116	Rattus norvegicus	83619	live	Nfe2l2		nuclear factor, erythroid 2-like 2	nuclear factor erythroid 2 related factor 2 NF-E2-related factor 2 NFE2-related factor 2 nrf2 nuclear factor, erythroid derived 2, like 2	3q23	3	NC_005102.4	62497568	62525146	minus	7
10116	Rattus norvegicus	24599	live	Nos2	Nos2a, iNos	nitric oxide synthase 2	nitric oxide synthase, inducible NOS type II inducible NO synthase inducible NOS inducible nitric oxide synthase nitric oxide synthase 2, inducible, macrophage peptidyl-cysteine S-nitrosylase NOS2	10q25	10	NC_005109.4	66188290	66221621	plus	26
10116	Rattus norvegicus	29260	live	Tlr4		toll-like receptor 4	toll-like receptor 4 toll4	5q24	5	NC_005104.4	82587424	82601056	plus	3

10116	Rattus norvegicus	25125	live	Stat3		signal transducer and activator of transcription 3	signal transducer and activator of transcription 3 signal transducer and activator of transcription 3 (acute-phase response factor)	10q31	10	NC_005109.4	88790401	88842263	minus	24
10116	Rattus norvegicus	25664	live	Pparg		peroxisome proliferator-activated receptor gamma	peroxisome proliferator-activated receptor gamma PPAR-gamma nuclear receptor subfamily 1 group C member 3 peroxisome proliferator activator receptor, gamma	4q42	4	NC_005103.4	147274055	147399383	plus	10
10116	Rattus norvegicus	309757	live	Sirt1	Sir2	sirtuin 1	NAD-dependent protein deacetylase sirtuin-1 NAD-dependent deacetylase sirtuin-1 NAD-dependent protein deacylase sirtuin-1 Sir2alpha sirtuin 1 ((silent mating type information regulation 2, homolog) 1	20p11	20	NC_005119.4	26831971	26851587	minus	9

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10116	Rattus norvegicus	78975	live	Prkaa2	Ampk, Ampka2	protein kinase AMP-activated catalytic subunit alpha 2	5'-AMP-activated protein kinase catalytic subunit alpha-2 ACACA kinase AMP-activated protein kinase AMPK alpha-2 chain AMPK subunit alpha-2 HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 2 catalytic subunit	5q34	5	NC_005104.4	124568845	124642569	minus	10
10116	Rattus norvegicus	84353	live	Ctnnb1	Catnb	catenin beta 1	catenin beta-1 beta-catenin catenin (cadherin associated protein), beta 1, 88kDa	8q32	8	NC_005107.4	129601511	129628378	plus	18
10116	Rattus norvegicus	24329	live	Egfr	ERBB1, ErbB-1, Errp	epidermal growth factor receptor	epidermal growth factor receptor EGFR-related peptide Epidermal growth factor receptor formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1) avian erythroblastic leukemia viral (v-erbB) oncogene homolog epidermal growth factor receptor, formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1)	14q22	14	NC_005113.4	99919485	100104136	plus	31
10116	Rattus norvegicus	117273	live	Rhoa	Arha, Arha2	ras homolog family member A	transforming protein RhoA plysia ras-related homolog A2 ras homolog gene family, member A	8q32	8	NC_005107.4	117082440	117116244	plus	7

10116	Rattus norvegicus	64032	live	Ccn2	CTGRP, Ctgf	cellular communication network factor 2	CCN family member 2 connective tissue growth factor connective tissue growth-related protein	1p12	1	NC_005100.4	21851657	21854773	minus	5
10116	Rattus norvegicus	309165	live	Rela	NFkB, nos2	RELA proto-oncogene, NFkB subunit	transcription factor p65 nuclear factor kappa B subunit p65 nuclear factor kappaB subunit p65 v-rel avian reticuloendotheliosis viral oncogene homolog A v-rel reticuloendotheliosis viral oncogene homolog A	1q43	1	NC_005100.4	220992770	221003249	plus	11
10116	Rattus norvegicus	24873	live	Vdr	Nr1i1	vitamin D receptor	vitamin D3 receptor 1,25-dihydroxyvitamin D3 receptor nuclear receptor subfamily 1 group I member 1 vitamin D (1,25-dihydroxyvitamin D3) receptor	7q36	7	NC_005106.4	139344452	139394138	minus	10

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Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	25496	live	Notch1	NOTCH, TAN1	notch receptor 1	neurogenic locus notch homolog protein 1 Drosophila Notch homolog 1 (controlling the the ectodermal and neural cell fate in Drosophila) Notch gene homolog 1 notch 1	3p13	3	NC_005102.4	3905562	3951015	minus	34
10116	Rattus norvegicus	302668	live	Ace2		angiotensin I converting enzyme 2	angiotensin-converting enzyme 2 ACE-related carboxypeptidase angiotensin I converting enzyme (peptidyl-dipeptidase A) 2 anigotensin-converting enzyme-related carboxypeptidase renal angiotensin-converting enzyme 2	Xq14	X	NC_005120.4	32050734	32095860	minus	18
10116	Rattus norvegicus	24391	live	Gh1	Gh, Ghb1, RNGHGP	growth hormone 1	somatotropin growth hormone b1	10q32.1	10	NC_005109.4	94486204	94488181	minus	5
10116	Rattus norvegicus	25296	live	Bmp4	BOMPR4A	bone morphogenetic protein 4	bone morphogenetic protein 4 BMP-2B BMP-4 bone morphogenetic protein 2B	15p14	15	NC_005114.4	20776060	20791013	minus	7
10116	Rattus norvegicus	25419	live	Crp	Aa1249, Ab1-341, Ab2-196, Ac1-114, Ac1262, Ac2-069, Ba2-693	C-reactive protein	C-reactive protein C-reactive protein, member of the pentraxin family C-reactive protein, pentraxin-related C-reactive protein, petaxin related	13q24	13	NC_005112.4	91080448	91081358	plus	2
10116	Rattus norvegicus	24335	live	Epo		erythropoietin	erythropoietin	12q12	12	NC_005111.4	22274828	22278268	plus	5
10116	Rattus norvegicus	85431	live	Nox4		NADPH oxidase 4	NADPH oxidase 4 kidney oxidase-1 kidney superoxide-producing NADPH oxidase kox-1	1q32	1	NC_005100.4	150796359	150976186	plus	22

10116	Rattus norvegicus	29452	live	Epas1	HIF-2 alpha, HIF2 alpha, HLF, Hif2a	endothelial PAS domain protein 1	endothelial PAS domain-containing protein 1 EPAS-1 HIF-2-alpha HIF2-alpha hypoxia inducible factor 2, alpha subunit hypoxia inducible factor 2a hypoxia-inducible factor 2-alpha	6q12	6	NC_005105.4	10306508	10385239	plus	16
10116	Rattus norvegicus	25253	live	Dpp4	CD26, DPPIV	dipeptidylpeptidase 4	dipeptidyl peptidase 4 DPP IV GP110 glycoprotein T-cell activation antigen CD26 bile canalculus domain-specific membrane glycoprotein dipeptidyl peptidase IV	3q21	3	NC_005102.4	48291055	48372672	minus	27

Sheet 1- List of CKD genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24782	live	Slc9a1	Nhe1	solute carrier family 9 member A1	sodium/hydrogen exchanger 1 NHE-1 Na(+)/H(+) exchanger 1 Solute carrier family 9 (sodium/hydrogen exchanger 1), antiporter, Na+/H+, (amiloride sensitive) solute carrier family 9 (sodium/hydrogen exchanger), member 1 solute carrier family 9 member 1 solute carrier family 9, subfamily A (NHE1, cation proton antiporter 1), member 1	5q36	5	NC_005104.4	151573122	151626360	plus	12
10116	Rattus norvegicus	25380	live	Anxa1	Anx1, p35	annexin A1	annexin A1 Annexin 1 (p35) (Lipocortin 1) annexin I annexin-1 calpactin II calpactin-2 chromobindin-9 lipocortin 1 lipocortin I phospholipase A2 inhibitory protein	1q51	1	NC_005100.4	237893983	237910002	minus	14
10116	Rattus norvegicus	24472	live	Hspa1b	HSP70.1, HSP70.2, HSP72, Hsp70-1, Hsp70-2, Hspa1, Hspa1a, Hspa2	heat shock protein family A (Hsp70) member 1B	heat shock 70 kDa protein 1B HSP70-1/HSP70-2 HSP70.1/2 HSP70.1/HS P70.2 Heat shock 70 kDa protein 1 Heat shock 70 kDa protein 1A Heat shock 70 kDa protein 2 heat shock 70 kDa protein 1/2 heat shock 70 kDa protein 1A/1B heat shock 70kD protein 1A heat shock 70kD protein 1B heat shock protein 1B heat shock protein 70-1 heat shock protein family A member 1B	20p12	20	NC_005119.4	4877638	4880112	minus	1

10116	Rattus norvegicus	312382	live	Abcg2	BCRP1, Bcrp	ATP binding cassette subfamily G member 2	broad substrate specificity ATP-binding cassette transporter ABCG2 ATP-binding cassette sub-family G member 2 ATP binding cassette subfamily G member 2 (Junior blood group) ATP-binding cassette protein G2 ATP-binding cassette, sub-family G (WHITE), member 2 ATP-binding cassette, subfamily G (WHITE), member 2 breast cancer resistance protein 1 homolog urate exporter	4q24	4	NC_005103.4	88765441	88890268	plus	22
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Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24817	live	Hnf1a	HNF1, LF-B1, Lfb1, Tcf1	HNF1 homeobox A	hepatocyte nuclear factor 1-alpha HNF-1-alpha HNF-1A LF-B1, hepatic nuclear factor (HNF1): albumin proximal factor, also TCF1 TCF-1 Transcription factor 1, hepatic albumin proximal factor hepatic nuclear factor 1 hepatic nuclear factor-1-alpha liver-specific transcription factor LF-B1	12q16	12	NC_005111.4	47407811	47433342	plus	10
10116	Rattus norvegicus	56083	live	Tgm2	Tgasell	transglutaminase 2	protein-glutamine gamma-glutamyltransferase 2 glutamine gamma-glutamyltransferase 2 tissue-type transglutaminase transglutaminase 2, C polypeptide	3q42	3	NC_005102.4	154597165	154627257	minus	13
10116	Rattus norvegicus	65248	live	Prkaa1	AMPKalpha1	protein kinase AMP-activated catalytic subunit alpha 1	5'-AMP-activated protein kinase catalytic subunit alpha-1 ACACA kinase AMPK alpha-1 chain HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 1 catalytic subunit tau-protein kinase PRKAA1	2q16	2	NC_005101.4	54857688	54893404	plus	9
10116	Rattus norvegicus	117519	live	Keap1	Inrf2	Kelch-like ECH-associated protein 1	kelch-like ECH-associated protein 1 cytosolic inhibitor of Nrf2	8q13	8	NC_005107.4	22250518	22259868	minus	6
10116	Rattus norvegicus	81633	live	Acta2		actin alpha 2, smooth muscle	actin, aortic smooth muscle actin, alpha 2, smooth muscle, aorta alpha-actin-2 smooth muscle alpha-actin	1q52	1	NC_005100.4	252537614	252550394	minus	9

10116	Rattus norvegicus	64157	live	Ddah1		dimethylarginine dimethylaminohydrolase 1	N(G),N(G)-dimethylarginine dimethylaminohydrolase 1 DDAH-1 DDAH1 NG,NG dimethylarginine dimethylaminohydrolase dimethylargininase-1	2q44	2	NC_005101.4	251634368	251766009	plus	7
10116	Rattus norvegicus	100314231	live	Mir30b	rno-mir-30b	microRNA 30b	microRNA mir-30b	7q34	7	NC_005106.4	109282662	109282747	minus	1

Sheet-2- Inflammatory genes retrieved from NCBI

Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24835	live	Tnf	RATTNF, TNF-alphaa, Tnf	tumor necrosis factor	tumor necrosis factor cachectin tumor necrosis factor (TNF superfamily, member 2) tumor necrosis factor ligand superfamily member 2	20p12	20	NC_005119.4	5189382	5192000	minus	4
10116	Rattus norvegicus	24494	live	Il1b	IL-1F2	interleukin 1 beta	interleukin-1 beta IL-1 beta	3q36	3	NC_005102.4	121876256	121882637	minus	7
10116	Rattus norvegicus	29260	live	Tlr4		toll-like receptor 4	toll-like receptor 4 toll4	5q24	5	NC_005104.4	82587424	82601056	plus	3
10116	Rattus norvegicus	29560	live	Hif1a	HIF1-alpha, MOP1	hypoxia inducible factor 1 subunit alpha	hypoxia-inducible factor 1-alpha HIF1 alpha hypoxia inducible factor 1 alpha subunit hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	6q24	6	NC_005105.4	96810868	96856303	plus	16
10116	Rattus norvegicus	59086	live	Tgfb1	Tgfb	transforming growth factor, beta 1	transforming growth factor beta-1 proprotein TGF-beta-1	1q21	1	NC_005100.4	82480875	82497196	plus	7
10116	Rattus norvegicus	24599	live	Nos2	Nos2a, iNos	nitric oxide synthase 2	nitric oxide synthase, inducible NOS type II inducible NO synthase inducible NOS inducible nitric oxide synthase nitric oxide synthase 2, inducible, macrophage peptidyl-cysteine S-nitrosylase NOS2	10q25	10	NC_005109.4	66188290	66221621	plus	26
10116	Rattus norvegicus	83619	live	Nfe2l2		nuclear factor, erythroid 2-like 2	nuclear factor erythroid 2-related factor 2 NF-E2-related factor 2 NFE2-related factor 2 nrf2 nuclear factor, erythroid derived 2, like 2	3q23	3	NC_005102.4	62497568	62525146	minus	7
10116	Rattus norvegicus	25125	live	Stat3		signal transducer and activator of transcription 3	signal transducer and activator of transcription 3 signal transducer and activator of transcription 3 (acute-phase response factor)	10q31	10	NC_005109.4	88790401	88842263	minus	24
10116	Rattus norvegicus	25664	live	Pparg		peroxisome proliferator-activated receptor gamma	peroxisome proliferator-activated receptor gamma PPAR gamma nuclear receptor subfamily 1 group C member 3 peroxisome proliferator activator receptor, gamma	4q42	4	NC_005103.4	147274055	147399383	plus	10
10116	Rattus norvegicus	309165	live	Rela	NFkB, nos2	RELA proto-oncogene, NF kB subunit	transcription factor p65 nuclear factor kappa B subunit p65 nuclear factor kappaB subunit p65 v-rel avian reticuloendotheliosis viral oncogene homolog A v-rel reticuloendotheliosis viral oncogene homolog A	1q43	1	NC_005100.4	220992770	221003249	plus	11

10116	Rattus norvegicus	309757	live	Sirt1	Sir2	sirtuin 1	NAD-dependent protein deacetylase sirtuin-1 NAD-dependent deacetylase sirtuin-1 NAD-dependent protein deacylase sirtuin-1 Sir2alpha sirtuin 1 ((silent mating type information regulation 2, homolog) 1	20p11	20	NC_005119.4	26831971	26851587	minus	9
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Sheet-2- Inflammatory genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24329	live	Egfr	ERBB1, ErbB-1, Errp	epidermal growth factor receptor	epidermal growth factor receptor EGFR-related peptide Epidermal growth factor receptor formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1) avian erythroblastic leukemia viral (v-erbB) oncogene homolog epidermal growth factor receptor, formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1)	14q22	14	NC_005113.4	99919485	100104136	plus	31
10116	Rattus norvegicus	25380	live	Anxa1	Anx1, p35	annexin A1	annexin A1 Annexin 1 (p35) (Lipocortin 1) annexin I annexin-1 calpactin II calpactin-2 chromobindin-9 lipocortin 1 lipocortin I phospholipase A2 inhibitory protein	1q51	1	NC_005100.4	237893983	237910002	minus	14
10116	Rattus norvegicus	78975	live	Prkaa2	Ampk, Ampka2	protein kinase AMP-activated catalytic subunit alpha 2	5'-AMP-activated protein kinase catalytic subunit alpha-2 ACACA kinase AMP-activated protein kinase AMPK alpha-2 chain AMPK subunit alpha-2 HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 2 catalytic subunit	5q34	5	NC_005104.4	124568845	124642569	minus	10
10116	Rattus norvegicus	117273	live	Rhoa	Arha, Arha2	ras homolog family member A	transforming protein RhoA plysia ras-related homolog A2 ras homolog gene family, member A	8q32	8	NC_005107.4	117082440	117116244	plus	7
10116	Rattus norvegicus	64032	live	Ccn2	CTGRP, Ctgf	cellular communication network factor 2	CCN family member 2 connective tissue growth factor connective tissue growth-related protein	1p12	1	NC_005100.4	21851657	21854773	minus	5
10116	Rattus norvegicus	24873	live	Vdr	Nr1i1	vitamin D receptor	vitamin D3 receptor 1,25-dihydroxyvitamin D3 receptor nuclear receptor subfamily 1 group I member 1 vitamin D (1,25-dihydroxyvitamin D3) receptor	7q36	7	NC_005106.4	139344452	139394138	minus	10
10116	Rattus norvegicus	25496	live	Notch1	NOTCH, TAN1	notch receptor 1	neurogenic locus notch homolog protein 1 Drosophila Notch homolog 1 (controlling the the ectodermal and neural cell fate in Drosophila) Notch gene homolog 1 notch 1	3p13	3	NC_005102.4	3905562	3951015	minus	34

10116	Rattus norvegicus	25419	live	Crp	Aa1249, Ab1-341, Ab2-196, Ac1-114, Ac1262, Ac2-069, Ba2-693	C-reactive protein	C-reactive protein C-reactive protein, member of the pentraxin family C-reactive protein, pentraxin-related C-reactive protein, petaxin related	13q24	13	NC_005112.4	91080448	91081358	plus	2
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Sheet-2- Inflammatory genes retrieved from NCBI

Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	302668	live	Ace2		angiotensin I converting enzyme 2	angiotensin-converting enzyme 2 ACE-related carboxypeptidase angiotensin I converting enzyme (peptidyl-dipeptidase A) 2 anigotensin-converting enzyme-related carboxypeptidase renal angiotensin-converting enzyme 2	Xq14	X	NC_005120.4	32050734	32095860	minus	18
10116	Rattus norvegicus	25296	live	Bmp4	BOMPR4A	bone morphogenetic protein 4	bone morphogenetic protein 4 BMP-2B BMP-4 bone morphogenetic protein 2B	15p14	15	NC_005114.4	20776060	20791013	minus	7
10116	Rattus norvegicus	24335	live	Epo		erythropoietin	erythropoietin	12q12	12	NC_005111.4	22274828	22278268	plus	5
10116	Rattus norvegicus	25253	live	Dpp4	CD26, DPPIV	dipeptidylpeptidase 4	dipeptidyl peptidase 4 DPP IV GP110 glycoprotein T-cell activation antigen CD26 bile canaliculus domain-specific membrane glycoprotein dipeptidyl peptidase IV	3q21	3	NC_005102.4	48291055	48372672	minus	27
10116	Rattus norvegicus	56083	live	Tgm2	Tgasell	transglutaminase 2	protein-glutamine gamma-glutamyltransferase 2 glutamine gamma-glutamyltransferase 2 tissue-type transglutaminase transglutaminase 2, C polypeptide	3q42	3	NC_005102.4	154597165	154627257	minus	13
10116	Rattus norvegicus	24782	live	Slc9a1	Nhe1	solute carrier family 9 member A1	sodium/hydrogen exchanger 1 NHE-1 Na(+)/H(+) exchanger 1 Solute carrier family 9 (sodium/hydrogen exchanger 1), antiporter, Na+/H+, (amiloride sensitive) solute carrier family 9 (sodium/hydrogen exchanger), member 1 solute carrier family 9 member 1 solute carrier family 9, subfamily A (NHE1, cation proton antiporter 1), member 1	5q36	5	NC_005104.4	151573122	151626360	plus	12
10116	Rattus norvegicus	24472	live	Hspa1b	HSP70.1, HSP70.2, HSP72, Hsp70-1, Hsp70-2, Hspa1, Hspa1a, Hspa2	heat shock protein family A (Hsp70) member 1B	heat shock 70 kDa protein 1B HSP70-1/HSP70-2 HSP70.1/2 HSP70.1/HSP70.2 Heat shock 70 kDa protein 1 Heat shock 70 kDa protein 1A Heat shock 70 kDa protein 2 heat shock 70 kDa protein 1/2 heat shock 70 kDa protein 1A/1B heat shock 70kD protein 1A heat shock 70kD protein 1B heat shock protein 1B heat shock protein 70-1 heat shock protein family A member 1B	20p12	20	NC_005119.4	4877638	4880112	minus	1

10116	Rattus norvegicus	312382	live	Abcg2	BCRP1, Bcrp	ATP binding cassette subfamily G member 2	broad substrate specificity ATP-binding cassette transporter ABCG2 ATP-binding cassette subfamily G member 2 ATP binding cassette subfamily G member 2 (Junior blood group) ATP-binding cassette protein G2 ATP-binding cassette, sub-family G (WHITE), member 2 ATP-binding cassette, subfamily G (WHITE), member 2 breast cancer resistance protein 1 homolog urate exporter	4q24	4	NC_005103.4	88765441	88890268	plus	22
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Sheet-3- Apoptotic Genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24835	live	Tnf	RATTNF, TNF-alphaa, Tnf	tumor necrosis factor	tumor necrosis factor cachectin tumor necrosis factor (TNF superfamily, member 2) tumor necrosis factor ligand superfamily member 2	20p12	20	NC_005119.4	5189382	5192000	minus	4
10116	Rattus norvegicus	309757	live	Sirt1	Sir2	sirtuin 1	NAD-dependent protein deacetylase sirtuin-1 NAD-dependent deacetylase sirtuin-1 NAD-dependent protein deacylase sirtuin-1 Sir2alpha sirtuin 1 ((silent mating type information regulation 2, homolog) 1	20p11	20	NC_005119.4	26831971	26851587	minus	9
10116	Rattus norvegicus	29560	live	Hif1a	HIF1-alpha, MOP1	hypoxia inducible factor 1 subunit alpha	hypoxia-inducible factor 1-alpha HIF1 alpha hypoxia inducible factor 1 alpha subunit hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	6q24	6	NC_005105.4	96810868	96856303	plus	16
10116	Rattus norvegicus	59086	live	Tgfb1	Tgfb	transforming growth factor, beta 1	transforming growth factor beta-1 proprotein TGF-beta-1	1q21	1	NC_005100.4	82480875	82497196	plus	7
10116	Rattus norvegicus	24494	live	Il1b	IL-1F2	interleukin 1 beta	interleukin-1 beta IL-1 beta	3q36	3	NC_005102.4	121876256	121882637	minus	7
10116	Rattus norvegicus	83619	live	Nfe2l2		nuclear factor, erythroid 2-like 2	nuclear factor erythroid 2-related factor 2 NF-E2-related factor 2 NFE2-related factor 2 nrf2 nuclear factor, erythroid derived 2, like 2	3q23	3	NC_005102.4	62497568	62525146	minus	7
10116	Rattus norvegicus	25664	live	Pparg		peroxisome proliferator-activated receptor gamma	peroxisome proliferator-activated receptor gamma PPAR gamma nuclear receptor subfamily 1 group C member 3 peroxisome proliferator activator receptor, gamma	4q42	4	NC_005103.4	147274055	147399383	plus	10
10116	Rattus norvegicus	84353	live	Ctnnb1	Catnb	catenin beta 1	catenin beta-1 beta-catenin catenin (cadherin associated protein), beta 1, 88kDa	8q32	8	NC_005107.4	129601511	129628378	plus	18
10116	Rattus norvegicus	24599	live	Nos2	Nos2a, iNos	nitric oxide synthase 2	nitric oxide synthase, inducible NOS type II inducible NO synthase inducible NOS inducible nitric oxide synthase nitric oxide synthase 2, inducible, macrophage peptidyl-cysteine S-nitrosylase NOS2	10q25	10	NC_005109.4	66188290	66221621	plus	26
10116	Rattus norvegicus	25296	live	Bmp4	BOMPR4A	bone morphogenetic protein 4	bone morphogenetic protein 4 BMP-2B BMP-4 bone morphogenetic protein 2B	15p14	15	NC_005114.4	20776060	20791013	minus	7

10116	Rattus norvegicus	29260	live	Tlr4		toll-like receptor 4	toll-like receptor 4 toll4	5q24	5	NC_005104.4	82587424	82601056	plus	3
10116	Rattus norvegicus	24472	live	Hspa1b	HSP70.1, HSP70.2, HSP72, Hsp70-1, Hsp70-2, Hspa1, Hspa1a, Hspa2	heat shock protein family A (Hsp70) member 1B	heat shock 70 kDa protein 1B HSP70-1/HSP70-2 HSP70.1/2 HSP70.1/HSP70.2 Heat shock 70 kDa protein 1 Heat shock 70 kDa protein 1A Heat shock 70 kDa protein 2 heat shock 70 kDa protein 1/2 heat shock 70 kDa protein 1A/1B heat shock 70kD protein 1A heat shock 70kD protein 1B heat shock protein 1B heat shock protein 70-1 heat shock protein family A member 1B	20p12	20	NC_005119.4	4877638	4880112	minus	1

Sheet-3- Apoptotic Genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24335	live	Epo		erythropoietin	erythropoietin	12q12	12	NC_005111.4	22274828	22278268	plus	5
10116	Rattus norvegicus	25125	live	Stat3		signal transducer and activator of transcription 3	signal transducer and activator of transcription 3 signal transducer and activator of transcription 3 (acute-phase response factor)	10q31	10	NC_005109.4	88790401	88842263	minus	24
10116	Rattus norvegicus	117273	live	Rhoa	Arha, Arha2	ras homolog family member A	transforming protein RhoA plysia ras-related homolog A2 ras homolog gene family, member A	8q32	8	NC_005107.4	117082440	117116244	plus	7
10116	Rattus norvegicus	309165	live	Rela	NFkB, nos2	RELA proto-oncogene, NF kB subunit	transcription factor p65 nuclear factor kappa B subunit p65 nuclear factor kappaB subunit p65 v-rel avian reticuloendotheliosis viral oncogene homolog A v-rel reticuloendotheliosis viral oncogene homolog A	1q43	1	NC_005100.4	220992770	221003249	plus	11
10116	Rattus norvegicus	78975	live	Prkaa2	Ampk, Ampka2	protein kinase AMP-activated catalytic subunit alpha 2	5'-AMP-activated protein kinase catalytic subunit alpha-2 ACACA kinase AMP-activated protein kinase AMPK alpha-2 chain AMPK subunit alpha-2 HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 2 catalytic subunit	5q34	5	NC_005104.4	124568845	124642569	minus	10
10116	Rattus norvegicus	24873	live	Vdr	Nr1i1	vitamin D receptor	vitamin D3 receptor 1,25-dihydroxyvitamin D3 receptor nuclear receptor subfamily 1 group I member 1 vitamin D (1,25-dihydroxyvitamin D3) receptor	7q36	7	NC_005106.4	139344452	139394138	minus	10
10116	Rattus norvegicus	24329	live	Egfr	ERBB1, ErbB-1, Errp	epidermal growth factor receptor	epidermal growth factor receptor EGFR-related peptide Epidermal growth factor receptor formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1) avian erythroblastic leukemia viral (v-erbB) oncogene homolog epidermal growth factor receptor, formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1)	14q22	14	NC_005113.4	99919485	100104136	plus	31

10116	Rattus norvegicus	25496	live	Notch1	NOTCH, TAN1	notch receptor 1	neurogenic locus notch homolog protein 1 Drosophila Notch homolog 1 (controlling the the ectodermal and neural cell fate in Drosophila) Notch gene homolog 1 notch 1	3p13	3	NC_005102.4	3905562	3951015	minus	34
10116	Rattus norvegicus	64032	live	Ccn2	CTGRP, Ctgf	cellular communication network factor 2	CCN family member 2 connective tissue growth factor connective tissue growth-related protein	1p12	1	NC_005100.4	21851657	21854773	minus	5
10116	Rattus norvegicus	25380	live	Anxa1	Anx1, p35	annexin A1	annexin A1 Annexin 1 (p35) (Lipocortin 1) annexin I annexin-1 calpactin II calpactin-2 chromobindin-9 lipocortin 1 lipocortin I phospholipase A2 inhibitory protein	1q51	1	NC_005100.4	237893983	237910002	minus	14

Sheet-3- Apoptotic Genes retrieved from NCBI

Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	85431	live	Nox4		NADPH oxidase 4	NADPH oxidase 4 kidney oxidase 1 kidney superoxide-producing NADPH oxidase kox-1	1q32	1	NC_005100.4	150796359	150976186	plus	22
10116	Rattus norvegicus	24782	live	Slc9a1	Nhe1	solute carrier family 9 member A1	sodium/hydrogen exchanger 1 NHE-1 Na(+)/H(+) exchanger 1 Solute carrier family 9 (sodium/hydrogen exchanger 1), antiporter, Na+/H+, (amiloride sensitive) solute carrier family 9 (sodium/hydrogen exchanger), member 1 solute carrier family 9 member 1 solute carrier family 9, subfamily A (NHE1, cation proton antiporter 1), member 1	5q36	5	NC_005104.4	151573122	151626360	plus	12
10116	Rattus norvegicus	56083	live	Tgm2	Tgasell	transglutaminase 2	protein-glutamine gamma-glutamyltransferase 2 glutamine gamma-glutamyltransferase 2 tissue-type transglutaminase transglutaminase 2, C polypeptide	3q42	3	NC_005102.4	154597165	154627257	minus	13
10116	Rattus norvegicus	25419	live	Crp	Aa1249, Ab1-341, Ab2-196, Ac1-114, Ac1262, Ac2-069, Ba2-693	C-reactive protein	C-reactive protein C-reactive protein, member of the pentraxin family C-reactive protein, pentraxin-related C-reactive protein, petaxin related	13q24	13	NC_005112.4	91080448	91081358	plus	2
10116	Rattus norvegicus	65248	live	Prkaa1	AMPKalpha 1	protein kinase AMP-activated catalytic subunit alpha 1	5'-AMP-activated protein kinase catalytic subunit alpha-1 ACACA kinase AMPK alpha-1 chain HMGR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 1 catalytic subunit tau-protein kinase PRKAA1	2q16	2	NC_005101.4	54857688	54893404	plus	9
10116	Rattus norvegicus	1E+08	live	Mir30b	rno-mir-30b	microRNA 30b	microRNA mir-30b	7q34	7	NC_005106.4	109282662	109282747	minus	1

Sheet-4- Genes for fibrosis retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	24835	live	Tnf	RATTNF, TNF-alphaa, Tnf	tumor necrosis factor	tumor necrosis factor cachectin tumor necrosis factor (TNF superfamily, member 2) tumor necrosis factor ligand superfamily member 2	20p12	20	NC_005119.4	5189382	5192000	minus	4
10116	Rattus norvegicus	59086	live	Tgfb1	Tgfb	transforming growth factor, beta 1	transforming growth factor beta-1 proprotein TGF-beta-1	1q21	1	NC_005100.4	82480875	82497196	plus	7
10116	Rattus norvegicus	29560	live	Hif1a	HIF1-alpha, MOP1	hypoxia inducible factor 1 subunit alpha	hypoxia-inducible factor 1-alpha HIF1 alpha hypoxia inducible factor 1 alpha subunit hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	6q24	6	NC_005105.4	96810868	96856303	plus	16
10116	Rattus norvegicus	24494	live	Il1b	IL-1F2	interleukin 1 beta	interleukin-1 beta IL-1 beta	3q36	3	NC_005102.4	121876256	121882637	minus	7
10116	Rattus norvegicus	83619	live	Nfe2l2		nuclear factor, erythroid 2-like 2	nuclear factor erythroid 2-related factor 2 NF-E2-related factor 2 NFE2-related factor 2 nrf2 nuclear factor, erythroid derived 2, like 2	3q23	3	NC_005102.4	62497568	62525146	minus	7
10116	Rattus norvegicus	25664	live	Pparg		peroxisome proliferator-activated receptor gamma	peroxisome proliferator-activated receptor gamma PPAR gamma nuclear receptor subfamily 1 group C member 3 peroxisome proliferator activator receptor, gamma	4q42	4	NC_005103.4	147274055	147399383	plus	10
10116	Rattus norvegicus	29260	live	Tlr4		toll-like receptor 4	toll-like receptor 4 toll4	5q24	5	NC_005104.4	82587424	82601056	plus	3
10116	Rattus norvegicus	24599	live	Nos2	Nos2a, iNos	nitric oxide synthase 2	nitric oxide synthase, inducible NOS type II inducible NO synthase inducible NOS inducible nitric oxide synthase nitric oxide synthase 2, inducible, macrophage peptidyl-cysteine S-nitrosylase NOS2	10q25	10	NC_005109.4	66188290	66221621	plus	26
10116	Rattus norvegicus	25125	live	Stat3		signal transducer and activator of transcription 3	signal transducer and activator of transcription 3 signal transducer and activator of transcription 3 (acute-phase response factor)	10q31	10	NC_005109.4	88790401	88842263	minus	24
10116	Rattus norvegicus	309757	live	Sirt1	Sir2	sirtuin 1	NAD-dependent protein deacetylase sirtuin-1 NAD-dependent deacetylase sirtuin-1 NAD-dependent protein deacylase sirtuin-1 Sir2alpha sirtuin 1 ((silent mating type information regulation 2, homolog) 1	20p11	20	NC_005119.4	26831971	26851587	minus	9
10116	Rattus norvegicus	64032	live	Ccn2	CTGRP, Ctgf	cellular communication network factor 2	CCN family member 2 connective tissue growth factor connective tissue growth-related protein	1p12	1	NC_005100.4	21851657	21854773	minus	5
10116	Rattus norvegicus	84353	live	Ctnnb1	Catnb	catenin beta 1	catenin beta-1 beta-catenin catenin (cadherin associated protein), beta 1, 88kDa	8q32	8	NC_005107.4	129601511	129628378	plus	18

Sheet-4- Genes for fibrosis retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	78975	live	Prkaa2	Ampk, Ampka2	protein kinase AMP-activated catalytic subunit alpha 2	5'-AMP-activated protein kinase catalytic subunit alpha-2 ACACA kinase AMP-activated protein kinase AMPK alpha-2 chain AMPK subunit alpha-2 HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 2 catalytic subunit	5q34	5	NC_005104.4	124568845	124642569	minus	10
10116	Rattus norvegicus	24329	live	Egfr	ERBB1, ErbB-1, Errp	epidermal growth factor receptor	epidermal growth factor receptor EGFR-related peptide Epidermal growth factor receptor formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1) avian erythroblastic leukemia viral (v-erbB) oncogene homolog epidermal growth factor receptor, formerly avian erythroblastic leukemia viral (v-erbB) oncogene homolog (ErbB1)	14q22	14	NC_005113.4	99919485	100104136	plus	31
10116	Rattus norvegicus	25496	live	Notch1	NOTCH, TAN1	notch receptor 1	neurogenic locus notch homolog protein 1 Drosophila Notch homolog 1 (controlling the the ectodermal and neural cell fate in Drosophila) Notch gene homolog 1 notch 1	3p13	3	NC_005102.4	3905562	3951015	minus	34
10116	Rattus norvegicus	117273	live	Rhoa	Arha, Arha2	ras homolog family member A	transforming protein RhoA plysia ras-related homolog A2 ras homolog gene family, member A	8q32	8	NC_005107.4	117082440	117116244	plus	7
10116	Rattus norvegicus	302668	live	Ace2		angiotensin I converting enzyme 2	angiotensin-converting enzyme 2 ACE-related carboxypeptidase angiotensin I converting enzyme (peptidyl-dipeptidase A) 2 anigotensin-converting enzyme-related carboxypeptidase renal angiotensin-converting enzyme 2	Xq14	X	NC_005120.4	32050734	32095860	minus	18
10116	Rattus norvegicus	309165	live	Rela	NFkB, nos2	RELA proto-oncogene, NF kB subunit	transcription factor p65 nuclear factor kappa B subunit p65 nuclear factor kappaB subunit p65 v-rel avian reticuloendotheliosis viral oncogene homolog A v-rel reticuloendotheliosis viral oncogene homolog A	1q43	1	NC_005100.4	220992770	221003249	plus	11
10116	Rattus norvegicus	24873	live	Vdr	Nr1i1	vitamin D receptor	vitamin D3 receptor 1,25-dihydroxyvitamin D3 receptor nuclear receptor subfamily 1 group I member 1 vitamin D (1,25-dihydroxyvitamin D3) receptor	7q36	7	NC_005106.4	139344452	139394138	minus	10
10116	Rattus norvegicus	25296	live	Bmp4	BOMPR4A	bone morphogenetic protein 4	bone morphogenetic protein 4 BMP-2B BMP-4 bone morphogenetic protein 2B	15p14	15	NC_005114.4	20776060	20791013	minus	7
10116	Rattus norvegicus	85431	live	Nox4		NADPH oxidase 4	NADPH oxidase 4 kidney oxidase 1 kidney superoxide-producing NADPH oxidase kox-1	1q32	1	NC_005100.4	150796359	150976186	plus	22
10116	Rattus norvegicus	24335	live	Epo		erythropoietin	erythropoietin	12q12	12	NC_005111.4	22274828	22278268	plus	5

Sheet-4- Genes for fibrosis retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	81633	live	Acta2		actin alpha 2, smooth muscle	actin, aortic smooth muscle actin, alpha 2, smooth muscle, aorta alpha-actin-2 smooth muscle alpha-actin	1q52	1	NC_005100.4	252537614	252550394	minus	9
10116	Rattus norvegicus	25253	live	Dpp4	CD26, DPPIV	dipeptidylpeptidase 4	dipeptidyl peptidase 4 DPP IV GP110 glycoprotein T-cell activation antigen CD26 bile canalculus domain-specific membrane glycoprotein dipeptidyl peptidase IV	3q21	3	NC_005102.4	48291055	48372672	minus	27
10116	Rattus norvegicus	24782	live	Slc9a1	Nhe1	solute carrier family 9 member A1	sodium/hydrogen exchanger 1 NHE-1 Na(+)/H(+) exchanger 1 Solute carrier family 9 (sodium/hydrogen exchanger 1), antiporter, Na+/H+, (amiloride sensitive) solute carrier family 9 (sodium/hydrogen exchanger), member 1 solute carrier family 9 member 1 solute carrier family 9, subfamily A (NHE1, cation proton antiporter 1), member 1	5q36	5	NC_005104.4	151573122	151626360	plus	12
10116	Rattus norvegicus	24472	live	Hspa1b	HSP70.1, HSP70.2, HSP72, Hsp70-1, Hsp70-2, Hspa1, Hspa1a, Hspa2	heat shock protein family A (Hsp70) member 1B	heat shock 70 kDa protein 1B HSP70-1/HSP70-2 HSP70.1/2 HSP70.1/HSP70.2 Heat shock 70 kDa protein 1 Heat shock 70 kDa protein 1A Heat shock 70 kDa protein 2 heat shock 70 kDa protein 1/2 heat shock 70 kDa protein 1A/1B heat shock 70kD protein 1A heat shock 70kD protein 1B heat shock protein 1B heat shock protein 70-1 heat shock protein family A member 1B	20p12	20	NC_005119.4	4877638	4880112	minus	1
10116	Rattus norvegicus	117519	live	Keap1	Inrf2	Kelch-like ECH-associated protein 1	kelch-like ECH-associated protein 1 cytosolic inhibitor of Nrf2	8q13	8	NC_005107.4	22250518	22259868	minus	6

Sheet-5- EMT Genes retrieved from NCBI														
Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	25296	live	Bmp4	BOMPR4A	bone morphogenetic protein 4	bone morphogenetic protein 4 BMP-2B BMP-4 bone morphogenetic protein 2B	15p14	15	NC_005114.4	20776060	20791013	minus	7
10116	Rattus norvegicus	59086	live	Tgfb1	Tgfb	transforming growth factor, beta 1	transforming growth factor beta-1 proprotein TGF-beta-1	1q21	1	NC_005100.4	82480875	82497196	plus	7
10116	Rattus norvegicus	25496	live	Notch1	NOTCH, TAN1	notch receptor 1	neurogenic locus notch homolog protein 1 Drosophila Notch homolog 1 (controlling the ectodermal and neural cell fate in Drosophila) Notch gene homolog 1 notch 1	3p13	3	NC_005102.4	3905562	3951015	minus	34
10116	Rattus norvegicus	84353	live	Ctnnb1	Catnb	catenin beta 1	catenin beta-1 beta-catenin catenin (cadherin associated protein), beta 1, 88kDa	8q32	8	NC_005107.4	129601511	129628378	plus	18

10116	Rattus norvegicus	29560	live	Hif1a	HIF1-alpha, MOP1	hypoxia inducible factor 1 subunit alpha	hypoxia-inducible factor 1-alpha HIF1 alpha hypoxia inducible factor 1 alpha subunit hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	6q24	6	NC_005105.4	96810868	96856303	plus	16
10116	Rattus norvegicus	24494	live	Il1b	IL-1F2	interleukin 1 beta	interleukin-1 beta IL-1 beta	3q36	3	NC_005102.4	121876256	121882637	minus	7
10116	Rattus norvegicus	25125	live	Stat3		signal transducer and activator of transcription 3	signal transducer and activator of transcription 3 signal transducer and activator of transcription 3 (acute-phase response factor)	10q31	10	NC_005109.4	88790401	88842263	minus	24
10116	Rattus norvegicus	25664	live	Pparg		peroxisome proliferator-activated receptor gamma	peroxisome proliferator-activated receptor gamma PPAR gamma nuclear receptor subfamily 1 group C member 3 peroxisome proliferator activator receptor, gamma	4q42	4	NC_005103.4	147274055	147399383	plus	10
10116	Rattus norvegicus	83619	live	Nfe2l2		nuclear factor, erythroid 2-like 2	nuclear factor erythroid 2-related factor 2 NF-E2-related factor 2 NFE2-related factor 2 nrf2 nuclear factor, erythroid derived 2, like 2	3q23	3	NC_005102.4	62497568	62525146	minus	7
10116	Rattus norvegicus	117273	live	Rhoa	Arha, Arha2	ras homolog family member A	transforming protein RhoA plysia ras-related homolog A2 ras homolog gene family, member A	8q32	8	NC_005107.4	117082440	117116244	plus	7
10116	Rattus norvegicus	64032	live	Ccn2	CTGRP, Ctgf	cellular communication network factor 2	CCN family member 2 connective tissue growth factor connective tissue growth-related protein	1p12	1	NC_005100.4	21851657	21854773	minus	5
10116	Rattus norvegicus	309165	live	Rela	NFkB, nos2	RELA proto-oncogene, NFkB subunit	transcription factor p65 nuclear factor kappa B subunit p65 nuclear factor kappaB subunit p65 v-rel avian reticuloendotheliosis viral oncogene homolog A v-rel reticuloendotheliosis viral oncogene homolog A	1q43	1	NC_005100.4	220992770	221003249	plus	11

Sheet-5- EMT Genes retrieved from NCBI

Tax id	Org name	GeneID	Status	Symbol	Aliases	Description	Other designations	Map location	Chr	Genomic nucleotide accession. version	Start position on the genomic accession	End position on the genomic accession	Orientation	Exon count
10116	Rattus norvegicus	78975	live	Prkaa2	Ampk, Ampka2	protein kinase AMP-activated catalytic subunit alpha 2	5'-AMP-activated protein kinase catalytic subunit alpha-2 ACACA kinase AMP-activated protein kinase AMPK alpha-2 chain AMPK subunit alpha-2 HMGCR kinase acetyl-CoA carboxylase kinase hydroxymethylglutaryl-CoA reductase kinase protein kinase, AMP-activated, alpha 2 catalytic subunit	5q34	5	NC_005104.4	124568845	124642569	minus	10
10116	Rattus norvegicus	25380	live	Anxa1	Anx1, p35	annexin A1	annexin A1 Annexin 1 (p35) (Lipocortin 1) annexin I annexin-1 calpactin II calpactin-2 chromobindin-9 lipocortin 1 lipocortin I phospholipase A2 inhibitory protein	1q51	1	NC_005100.4	237893983	237910002	minus	14
10116	Rattus norvegicus	25419	live	Crp	Aa1249, Ab1-341, Ab2-196, Ac1-114, Ac1262, Ac2-069, Ba2-693	C-reactive protein	C-reactive protein C-reactive protein, member of the pentraxin family C-reactive protein, pentraxin-related C-reactive protein, petaxin related	13q24	13	NC_005112.4	91080448	91081358	plus	2