

ABCC9	BBS12	COL1A1	DSPP	FGFR2
ABL1	BBS2	COL1A2	DVL1	FGFR3
ACAN	BBS4	COL27A1	DVL3	FIG4
ACP5	BBS5	COL2A1	DYM	FKBP10
ACTB	BBS7	COL9A1	DYNC2H1	FKBP14
ACTG1	BBS9	COL9A2	DYNC2LI1	FLNA
ACVR1	BCS1L	COL9A3	EBP	FLNB
ADAMTS10	BGN	COLEC11	EDN1	FMN1
ADAMTS17	BHLHA9	COMP	EDNRA	FN1
ADAMTSL2	BMP1	COPB2	EED	FTO
AGA	BMP2	CREB3L1	EFL1	FUCA1
AGPS	BMPER	CREBBP	EFNB1	FUZ
AIFM1	BMPR1B	CRIP1	EFTUD2	FZD2
AKT1	BRAF	CRLF1	EIF2AK3	GALNS
ALG12	C2CD3	CRTAP	EIF4A3	GALNT3
ALG3	CA2	CSF1R	ENAM	GCM2
ALG9	CANT1	CSGALNACT1	ENPP1	GDF3
ALPL	CASR	CSPP1	EOGT	GDF5
ALX1	CBL	CTSA	EP300	GDF6
ALX3	CC2D2A	CTSC	ERF	GH1
ALX4	CCDC8	CTSK	ESCO2	GHR
AMER1	CCNQ	CUL7	EVC	GHRHR
ANAPC1	CDC45	CYP27B1	EVC2	GHSR
ANKH	CDC6	CYP2R1	EXOC6B	GJA1
ANKRD11	CDC73	DCC	EXT1	GLB1
ANO5	CDH3	DDR2	EXT2	GLI2
ANTXR2	CDKN1C	DDRGK1	EXTL3	GLI3
APC2	CDT1	DDX58	EZH2	GMNN
ARCN1	CENPE	DHCR24	FAM111A	GNAI3
ARHGAP31	CENPJ	DHCR7	FAM20A	GNAS
ARID1B	CEP120	DHODH	FAM20B	GNPAT
ARL6	CEP152	DIS3L2	FAM20C	GNPNAT1
ARSB	CEP290	DLL3	FAM83H	GNPTAB
ARSE	CEP63	DLL4	FANCB	GNPTG
ASXL1	CFAP410	DLX3	FANCC	GNS
ASXL2	CHST14	DLX5	FAR1	GORAB
ATP6V0A2	CHST3	DLX6	FBLN1	GPC6
ATP7A	CHSY1	DMP1	FBN1	GPX4
ATR	CKAP2L	DNA2	FBN2	GREM1
B3GALT6	CLCN5	DNAJC21	FERMT3	GSC
B3GAT3	CLCN7	DNMT3A	FGD1	GUSB
B3GLCT	COG1	DOCK6	FGF10	GZF1
B4GALT7	COG4	DONSON	FGF16	HAAO
B9D1	COL10A1	DPAGT1	FGF23	HDAC4
BBS1	COL11A1	DPM1	FGF9	HDAC8
BBS10	COL11A2	DSE	FGFR1	HES7

HESX1	KIAA0753	MMP14	PDE4D	PUF60
HGSNAT	KIAA1217	MMP2	PDIA6	PYCR1
HHAT	KIF22	MMP9	PEX5	RAB23
HNRNPK	KIF7	MNX1	PEX7	RAB33B
HOXA11	KL	MPDU1	PFN1	RAD21
HOXA13	KMT2A	MSX2	PGM3	RAF1
HOXD13	KMT2D	MTAP	PHEX	RASGRP2
HPGD	KRAS	MTX2	PHGDH	RBBP8
HRAS	KYNU	MYCN	PIGT	RBM8A
HS2ST1	LBR	MYH3	PIGV	RBPJ
HSPA9	LEMD3	MYO18B	PIK3C2A	RECQL4
HSPG2	LFNG	NAGLU	PIK3CA	RFT1
HYLS1	LHX3	NANS	PIK3R1	RINT1
IARS2	LHX4	NBAS	PISD	RIPPLY2
ICK	LIFR	NEK1	PITX1	RIT1
ID4	LMBR1	NEU1	PITX2	RMRP
IDH1	LMNA	NF1	PKDCC	ROR2
IDH2	LMX1B	NFIX	PLCB3	RPGRIP1L
IDS	LONP1	NIPBL	PLCB4	RPL13
IDUA	LPIN2	NKX3-2	PLEKHM1	RSPO2
IFIH1	LRP4	NLRP3	PLOD1	RSPRY1
IFITM5	LRP5	NOG	PLOD2	RTTN
IFT122	LRRK1	NOTCH1	PLS3	RUNX2
IFT140	LTBP1	NOTCH2	POC1A	SALL1
IFT172	LTBP2	NPPC	POLE	SALL4
IFT43	LTBP3	NPR2	POLR1A	SBDS
IFT52	LZTR1	NPR3	POLR1B	SC5D
IFT57	MAFB	NRAS	POLR1C	SCARF2
IFT80	MAN2B1	NSD1	POLR1D	SCUBE3
IFT81	MANBA	NSDHL	POLR3A	SEC24D
IGF1	MAP2K1	NSMCE2	POLR3B	SERPINF1
IGF1R	MAP2K2	NXN	POP1	SERPINH1
IGF2	MAP3K7	OBSL1	POR	SETBP1
IGFALS	MASP1	OFD1	POU1F1	SETD2
IHH	MATN3	ORC1	PPIB	SF3B4
IKBKG	MBTPS1	ORC4	PPP3CA	SFRP4
IL11RA	MBTPS2	ORC6	PRKAR1A	SGMS2
IL1RN	MECOM	OSTM1	PRKG2	SGSH
IMPAD1	MEGF8	OTX2	PRMT7	SH3BP2
INPPL1	MEOX1	P3H1	PROKR2	SH3PXD2B
INSR	MESD	P4HB	PROP1	SHH
INTU	MESP2	PAM16	PSAT1	SHOC2
IRS1	MET	PAPSS2	PSPH	SHOX
KAT6B	MGP	PAX3	PTDSS1	SKI
KCNJ2	MKKS	PCNT	PTH1R	SLC10A7
KDELR2	MKS1	PCYT1A	PTHLH	SLC17A5
KIAA0586	MMP13	PDE3A	PTPN11	SLC26A2

SLC29A3	TBX5	VDR
SLC34A1	TBX6	VIPAS39
SLC34A3	TBXAS1	VPS13B
SLC35C1	TCF12	VPS33A
SLC35D1	TCIRG1	VPS35L
SLC39A13	TCOF1	WBP11
SLC7A7	TCTEX1D2	WDPCP
SLCO2A1	TCTN2	WDR19
SLCO5A1	TCTN3	WDR34
SMAD2	TENT5A	WDR35
SMAD3	TERT	WDR60
SMAD4	TGDS	WISP3
SMAD6	TGFB1	WNT1
SMARCA2	TGFB2	WNT10B
SMARCA4	TGFB3	WNT3
SMARCAL1	TGFBR1	WNT5A
SMARCB1	TGFBR2	WNT6
SMARCE1	THPO	WNT7A
SMC1A	TMCO1	XRCC4
SMC3	TMEM165	XYLT1
SMOC1	TMEM216	XYLT2
SNRPB	TMEM231	YY1
SNX10	TMEM251	ZMPSTE24
SOS1	TMEM38B	ZNF33A
SOST	TMEM67	ZNF687
SOX2	TNFRSF11A	ZSWIM6
SOX3	TNFRSF11B	
SOX9	TNFSF11	
SP7	TONSL	
SPARC	TP63	
SQSTM1	TRAF3IP1	
SRCAP	TRAIP	
SRP54	TRAPPC2	
STAMBP	TREM2	
STAT5B	TRIM37	
SUCO	TRIP11	
SULF1	TRPS1	
SUMF1	TRPV4	
TAB2	TRPV6	
TALDO1	TTC21B	
TAPT1	TTC8	
TBCE	TWIST1	
TBX15	TYROBP	
TBX19	UBA2	
TBX2	UFSP2	
TBX3	UNC45A	
TBX4	VAC14	



## Lyhytkasvuisuus ja luuston kehityshäiriöt

## Geenejä 582kpl

## Versio 1

3.7.2024

ABCC9	BBS12	COL1A1	DSPP	FGFR2
ABL1	BBS2	COL1A2	DVL1	FGFR3
ACAN	BBS4	COL27A1	DVL3	FIG4
ACP5	BBS5	COL2A1	DYM	FKBP10
ACTB	BBS7	COL9A1	DYNC2H1	FKBP14
ACTG1	BBS9	COL9A2	DYNC2LI1	FLNA
ACVR1	BCS1L	COL9A3	EBP	FLNB
ADAMTS10	BGN	COLEC11	EDN1	FMN1
ADAMTS17	BHLHA9	COMP	EDNRA	FN1
ADAMTSL2	BMP1	COPB2	EED	FTO
AGA	BMP2	CREB3L1	EFL1	FUCA1
AGPS	BMPER	CREBBP	EFNB1	FUZ
AIFM1	BMPR1B	CRIPT	EFTUD2	FZD2
AKT1	BRAF	CRLF1	EIF2AK3	GALNS
ALG12	C2CD3	CRTAP	EIF4A3	GALNT3
ALG3	CA2	CSF1R	ENAM	GCM2
ALG9	CANT1	CSGALNACT1	ENPP1	GDF3
ALPL	CASR	CSPP1	EOGT	GDF5
ALX1	CBL	CTSA	EP300	GDF6
ALX3	CC2D2A	CTSC	ERF	GH1
ALX4	CCDC8	CTSK	ESCO2	GHR
AMER1	CCNQ	CUL7	EVC	GHRHR
ANAPC1	CDC45	CYP27B1	EVC2	GHSR
ANKH	CDC6	CYP2R1	EXOC6B	GJA1
ANKRD11	CDC73	DCC	EXT1	GLB1
ANO5	CDH3	DDR2	EXT2	GLI2
ANTXR2	CDKN1C	DDRGK1	EXTL3	GLI3
APC2	CDT1	DDX58	EZH2	GMNN
ARCN1	CENPE	DHCR24	FAM111A	GNAI3
ARHGAP31	CENPJ	DHCR7	FAM20A	GNAS
ARID1B	CEP120	DHODH	FAM20B	GNPAT
ARL6	CEP152	DIS3L2	FAM20C	GNPNAT1
ARSB	CEP290	DLL3	FAM83H	GNPTAB
ARSE	CEP63	DLL4	FANCB	GNPTG
ASXL1	CFAP410	DLX3	FANCC	GNS
ASXL2	CHST14	DLX5	FAR1	GORAB
ATP6V0A2	CHST3	DLX6	FBLN1	GPC6
ATP7A	CHSY1	DMP1	FBN1	GPX4
ATR	CKAP2L	DNA2	FBN2	GREM1
B3GALT6	CLCN5	DNAJC21	FERMT3	GSC
B3GAT3	CLCN7	DNMT3A	FGD1	GUSB
B3GLCT	COG1	DOCK6	FGF10	GZF1
B4GALT7	COG4	DONSON	FGF16	HAAO
B9D1	COL10A1	DPAGT1	FGF23	HDAC4
BBS1	COL11A1	DPM1	FGF9	HDAC8
BBS10	COL11A2	DSE	FGFR1	HES7

HESX1	KIAA1217	MMP2		
HGSNAT	KIF22	MMP9	PDIA6	PUF60
HHAT	KIF7	MNX1	PEX5	PYCR1
HNRNPK	KL	MPDU1	PEX7	RAB23
HOXA11	KMT2A	MSX2	PFN1	RAB33B
HOXA13	KMT2D	MTAP	PGM3	RAD21
HOXD13	KRAS	MTX2	PHOX	RAF1
HPGD	KYNU	MYCN	PHGDH	RASGRP2
HRAS	LBR	MYH3	PIGT	RBBP8
HS2ST1	LEMD3	MYO18B	PIGV	RBM8A
HSPA9	LFNG	NAGLU	PIK3C2A	RBPJ
HSPG2	LHX3	NANS	PIK3CA	RECQL4
IARS2	LHX4	NBAS	PIK3R1	RFT1
ICK	LIFR	NEK1	PISD	RINT1
ID4	LMBR1	NEU1	PITX1	RIPPLY2
IDH1	LMNA	NF1	PITX2	RIT1
IDH2	LMX1B	NFIX	PKDCC	RMRP
IDS	LONP1	NIPBL	PLCB3	ROR2
IDUA	LPIN2	NKX3-2	PLCB4	RPGRIP1L
IFIH1	LRP4	NLRP3	PLEKHM1	RPL13
IFITM5	LRP5	NOG	PLOD1	RSPO2
IFT122	LRRK1	NOTCH1	PLOD2	RSPRY1
IFT140	LTBP1	NOTCH2	PLS3	RTTN
IFT172	LTBP2	NPPC	POC1A	RUNX2
IFT43	LTBP3	NPR2	POLE	SALL1
IFT52	LZTR1	NPR3	POLR1A	SALL4
IFT57	MAFB	NRAS	POLR1B	SBDS
IFT80	MAN2B1	NSD1	POLR1C	SC5D
IFT81	MANBA	NSDHL	POLR1D	SCARF2
IGF1	MAP2K1	NSMCE2	POLR3A	SCUBE3
IGF1R	MAP2K2	NXN	POLR3B	SEC24D
IGF2	MAP3K7	OBSL1	POP1	SERPINF1
IGFALS	MASP1	OFD1	POR	SERPINH1
IHH	MATN3	ORC1	POU1F1	SETBP1
IKBKKG	MBTPS1	ORC4	PPIB	SETD2
IL11RA	MBTPS2	ORC6	PPP3CA	SF3B4
IL1RN	MECOM	OSTM1	PRKAR1A	SFRP4
IMPAD1	MEGF8	OTX2	PRKG2	SGMS2
INPPL1	MEOX1	P3H1	PRMT7	SGSH
INSR	MESD	P4HB	PROKR2	SH3BP2
INTU	MESP2	PAM16	PROP1	SH3PXD2B
IRS1	MET	PAPSS2	PSAT1	SHH
KAT6B	MGP	PAX3	PSPH	SHOC2
KCNJ2	MKKS	PCNT	PTDSS1	SHOX
KDEL2	MKS1	PCYT1A	PTH1R	SKI
KIAA0586	MMP13	PDE3A	PTHLH	SLC10A7
KIAA0753	MMP14	PDE4D	PTPN11	SLC17A5

SLC26A2	TBX5	VDR
SLC29A3	TBX6	VIPAS39
SLC34A1	TBXAS1	VPS33A
SLC34A3	TCF12	VPS35L
SLC35C1	TCIRG1	WBP11
SLC35D1	TCOF1	WDPCP
SLC39A13	TCTEX1D2	WDR19
SLCO2A1	TCTN2	WDR34
SLCO5A1	TCTN3	WDR35
SMAD2	TENT5A	WDR60
SMAD3	TERT	WISP3
SMAD4	TGDS	WNT1
SMAD6	TGFB1	WNT10B
SMARCA2	TGFB2	WNT3
SMARCA4	TGFB3	WNT5A
SMARCAL1	TGFBR1	WNT6
SMARCB1	TGFBR2	WNT7A
SMARCE1	THPO	XRCC4
SMC1A	TMCO1	XYLT1
SMC3	TMEM165	XYLT2
SMOC1	TMEM216	YY1
SNRPB	TMEM231	ZMPSTE24
SNX10	TMEM251	ZNF33A
SOS1	TMEM38B	ZNF687
SOST	TMEM67	ZSWIM6
SOX2	TNFRSF11A	
SOX3	TNFRSF11B	
SOX9	TNFSF11	
SP7	TONSL	
SPARC	TP63	
SQSTM1	TRAF3IP1	
SRCAP	TRAIP	
SRP54	TRAPPC2	
STAMBP	TREM2	
STAT5B	TRIM37	
SUCO	TRIP11	
SULF1	TRPS1	
SUMF1	TRPV4	
TAB2	TRPV6	
TALDO1	TTC21B	
TAPT1	TTC8	
TBCE	TWIST1	
TBX15	TYROBP	
TBX19	UBA2	
TBX2	UFSP2	
TBX3	UNC45A	
TBX4	VAC14	