

# Invitae functional modeling platform

## Gene list

There are more than 1100 genes on Invitae's test menu for which the functional modeling platform (FMP) is being developed and applied as part of the variant interpretation process. The following is a list of genes that have validated FMP models associated with them.

### Things to know:

- FMP is not only gene-specific but it is also variant-specific, meaning that it is not applicable to every variant in a particular gene. So while a gene may be on the list, FMP will only be applied to certain missense variants in that gene where it has been shown to have a high level of accuracy.
- There are less than 1100 genes on this list because this list only includes genes for which FMP models have been validated and are being applied clinically. There are additional genes that have FMP models available but they are not yet validated and, therefore, not being applied to those genes yet.
- This list was updated as of September 2020 and will change frequently because FMP is a constantly evolving technology. New FMP models are continuously being evaluated and will be added when appropriate. FMP will apply to additional genes and variants as time goes on.

AARS2	ACTA1	ALDH3A2	ARSA	ATRX	C5orf42	CDK4	CLCN7
ABCA1	ACTA2	ALDH5A1	ARSB	AUTS2	CABP4	CDKL5	CLCNKB
ABCA12	ACTG2	ALDH6A1	ARSI	AVPR2	CACNA1A	CDON	CLN6
ABCA2	ACTN2	ALDH7A1	ARX	BBS10	CACNA1B	CELSR2	CLN8
ABCA4	ACVR2B	ALG1	ASL	BCHE	CACNA1C	CFI	CNGA3
ABCA7	ACVRL1	ALOX12B	ASNS	BCKDHA	CACNA1E	CFTR	CNGB1
ABCB11	ADA	ALOXE3	ASPA	BCS1L	CACNA1F	CHAT	CNGB3
ABCB4	ADCY5	ALPL	ASS1	BEST1	CACNA1G	CHD2	CNTN1
ABCC2	ADCY6	AMT	ATL1	BICD2	CACNA1H	CHD4	CNTN2
ABCC6	ADGRG1	ANKRD11	ATM	BMP4	CACNA1S	CHD7	COL11A1
ABCC8	ADGRV1	ANO10	ATP13A2	BMPR1A	CAPN3	CHD8	COL11A2
ABCD1	ADSL	ANO3	ATP1A1	BMPR1B	CASK	CHL1	COL12A1
ABCD4	AFG3L2	ANO5	ATP1A2	BMPR2	CASQ2	CHRNA1	COL1A1
ABL1	AGA	ANO6	ATP1A3	BRAF	CASR	CHRNA2	COL1A2
ACAD8	AGT	ANTXR2	ATP2A2	BRCA1	CAV1	CHRNA4	COL27A1
ACAD9	AGXT	APC	ATP2B2	BRCA2	CBL	CHRNB1	COL2A1
ACADM	AHI1	APOB	ATP2B3	BRIP1	CBS	CHRNB2	COL3A1
ACADS	AIFM1	AQP1	ATP2B4	BRSK2	CC2D2A	CHRND	COL4A1
ACADSB	AIRE	AQP2	ATP2C1	BRWD3	CCND2	CHRNE	COL4A2
ACADVL	AKT1	AQP5	ATP6V0A2	BSCL2	CD40LG	CHRNA4	COL4A3
ACAT1	AKT3	ARHGEF9	ATP7A	BTK	CDH11	CIT	COL4A4
ACO2	ALAS2	ARID1A	ATP7B	C10orf2	CDHR1	CLCN1	COL4A5
ACSF3	ALDH1A3	ARL13B	ATP8B1	C2CD3	CDK13	CLCN2	COL5A1



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COL5A2	CYP2U1	EHMT1	FLNA	GLDC	HNF1B	KCNJ5	LAMA2
COL6A1	CYP4F22	EIF2AK4	FLNB	GLI2	HOGA1	KCNJ6	LAMA3
COL6A2	CYP4V2	EIF2B5	FLT3	GLRA1	HRAS	KCNJ8	LARS2
COL6A3	DARS2	ELN	FOXC1	GLRB	HSD17B3	KCNK3	LBR
COL7A1	DBT	ENG	FOXE3	GMPPB	HSD17B4	KCNQ2	LDLR
COL9A1	DCC	EP300	FOXG1	GNAI3	HSPB1	KCNQ3	LHCGR
COL9A2	DCDC2	EPB42	FOXP1	GNAL	HUWE1	KCNQ4	LHX3
COL9A3	DCHS1	EPHA2	FOXP2	GNAO1	ICK	KCNQ5	LIPA
COLQ	DEAF1	ERBB4	FOXP3	GNAS	IDS	KCNT1	LMNA
COMP	DES	ERCC6	FOXRED1	GNAT2	IDUA	KCNT2	LMNB1
COPA	DHCR7	ETFB	FSHR	GNB4	IFIH1	KCNV2	LMNB2
COQ8A	DLAT	ETFDH	G6PC	GNE	IFT27	KDM5B	LPAR6
COQ8B	DLD	ETHE1	G6PC3	GNPTAB	IGF1R	KDM5C	LPL
COX20	DMPK	EXT1	G6PD	GRHPR	IGHMBP2	KDM6A	LRP1
CP	DNAH1	EYA1	GAA	GRIA3	IKBKB	KDSR	LRP2
CPLANE1	DNAH11	EZH2	GABRA1	GRIA4	IL2RG	KIF1A	LRP4
CPT2	DNAH17	F12	GABRA6	GRID2	IL7R	KIF4A	LRP5
CRB1	DNAH5	F13A1	GABRB1	GRIK2	INF2	KIF5A	LRPPRC
CRB2	DNAH8	F2	GABRB2	GRIN1	INPP5E	KIF7	LRRK2
CREBBP	DNAH9	F5	GABRB3	GRIN2A	INSR	KLF1	MAK
CRYAA	DNAI1	F7	GABRD	GRIN2B	IQSEC2	KLHL40	MAN2B1
CRYBA1	DNAJB6	F8	GABRG2	GRIN2D	IRAK4	KMT2A	MAP2K1
CSF1R	DNAJC6	F9	GALC	GRM6	IRF6	KMT2D	MAP2K2
CSNK2A1	DNM1	FA2H	GALNS	GRM7	ITGB3	KRAS	MAP3K1
CTC1	DNM2	FAH	GALT	GUCY2D	ITGB4	KRT1	MAP3K20
CTCF	DNMT3A	FANCA	GAN	GYS1	ITK	KRT10	MAP3K7
CTNNB1	DOK7	FARS2	GANAB	GYS2	JAG1	KRT12	MAPT
CTNS	DSC2	FAS	GARS	HADHA	JAK2	KRT13	MAST1
CTRC	DSG2	FAT2	GATA2	HCFC1	JAK3	KRT14	MC2R
CTSD	DUOX2	FAT4	GBE1	HCN1	KATNB1	KRT16	MC4R
CTSK	DYNC1H1	FBN1	GCDH	HCN2	KCNA1	KRT17	MCCC1
CYBB	DYNC2H1	FBN2	GCH1	HCN4	KCNA2	KRT2	MCCC2
CYP11A1	DYRK1A	FBN3	GDAP1	HDAC8	KCNA5	KRT25	MECP2
CYP11B1	DYRK1B	FBP1	GDF1	HECW2	KCNB1	KRT3	MED12
CYP11B2	DYSF	FBXL4	GFAP	HEXA	KCNC1	KRT5	MED13
CYP17A1	EARS2	FGD1	GFM1	HEXB	KCNC3	KRT6A	MED13L
CYP1B1	EBF3	FGF23	GHR	HGD	KCND2	KRT6B	MEN1
CYP21A2	EBP	FGFR1	GJA1	HGSNAT	KCNE1	KRT6C	MET
CYP24A1	ECEL1	FGFR2	GJA5	HIBCH	KCNH1	KRT74	MFN2
CYP26B1	ECHS1	FGFR3	GJB1	HK1	KCNH5	KRT85	MIP
CYP26C1	EDA	FH	GJB2	HLCS	KCNJ10	KRT86	MKKS
CYP27A1	EDAR	FKRP	GJC2	HMGC52	KCNJ11	KRT9	MKS1
CYP27B1	EEF1A2	FKTN	GLB1	HNF1A	KCNJ2	L1CAM	MLC1



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MLH1	NIPBL	PEX1	PXDN	SCN1A	SLC25A24	SRD5A2	TP53
MLYCD	NLRP12	PEX7	PYGL	SCN2A	SLC25A42	ST14	TPM3
MMAA	NLRP2	PHEX	RAB18	SCN3A	SLC26A2	STAG1	TPP1
MMAB	NLRP3	PHIP	RAB23	SCN7A	SLC26A3	STAT2	TRIO
MMACHC	NLRP5	PHKA2	RAB27A	SCN8A	SLC26A4	STAT3	TRMU
MME	NLRP7	PHKG2	RAB28	SCN9A	SLC26A5	STIL	TRPS1
MORC2	NOD2	PIEZO1	RAB39B	SDHA	SLC29A3	STK11	TRPV3
MPL	NOTCH1	PIEZO2	RAC2	SDHB	SLC2A1	STK36	TRPV4
MPV17	NOTCH2	PIK3CA	RAD51C	SDHC	SLC2A10	STK4	TRPV6
MPZ	NOTCH3	PIK3CD	RAD51D	SDHD	SLC2A2	STS	TSC2
MSH2	NPC1	PIK3R1	RAF1	SELENON	SLC4A1	SUCLA2	TSEN54
MSH6	NPHP3	PIK3R2	RAG1	SERPINA1	SLC52A2	SYNGAP1	TSHR
MTFMT	NPHS1	PKD1	RAG2	SERPINB6	SLC52A3	TAF1	TTR
MTM1	NPHS2	PKHD1	RALA	SERPINC1	SLC6A1	TBC1D24	TUBB2A
MTMR2	NPR2	PLA2G6	RAPSN	SERPINE1	SLC6A17	TBCD	TWNK
MTOR	NR0B1	PLCB1	RARS2	SERPINF2	SLC6A19	TBK1	TYMP
MUSK	NR2F1	PLCB4	RB1	SERPING1	SLC6A2	TBL1XR1	TYR
MUT	NR2F2	PLCD1	RBM20	SERPINH1	SLC6A3	TBX4	UBE3A
MVK	NR3C2	PLG	REEP1	SERPINI1	SLC6A5	TBX5	UBR1
MYBPC1	NRAS	PMM2	RELN	SETBP1	SLC6A8	TBXAS1	UGT1A1
MYBPC3	NSD1	PMP22	RERE	SETX	SMAD2	TCIRG1	USH2A
MYH3	NTRK1	PMS2	RHO	SGCA	SMAD3	TCTN2	VCP
MYH6	NTRK2	PNKP	RHOBTB2	SGSH	SMAD4	TECTA	VHL
MYH8	OAT	PNPT1	RIT1	SH3TC2	SMAD9	TEK	VIM
MYH9	OCA2	POC1A	ROBO1	SI	SMARCA2	TELO2	VLDLR
MYLK	OCRL	POC1B	ROBO2	SIK1	SMARCE1	TERT	VWF
MYLK2	OPA1	POLG	ROR2	SIX6	SMC1A	TGFB2	WAS
MYO15A	OPN1SW	POMGNT1	RP1L1	SKI	SMPD1	TGFB3	WASHC5
MYO7A	OTC	POU1F1	RPE65	SLC12A1	SOD1	TGFBR1	WDR19
MYOC	OTOF	PPP2R1A	RPGR	SLC12A2	SOS1	TGFBR2	WFS1
MYOT	PAH	PPT1	RPS6KA3	SLC12A3	SOS2	TGM1	WNK1
MYT1L	PAX6	PRICKLE1	RRM2B	SLC12A5	SOX9	TGM5	WNK4
NAGLU	PC	PRKAG2	RS1	SLC12A6	SPAST	TGM6	WNT1
NALCN	PCCA	PRKCD	RUNX2	SLC16A1	SPATA5	TH	WNT10A
NDUFV1	PCCB	PRKN	RYR1	SLC16A2	SPEG	THRB	WNT10B
NEFH	PCDH12	PROP1	RYR2	SLC17A5	SPG11	TK2	WNT4
NEFL	PCDH19	PRPF4	RYR3	SLC19A2	SPG7	TLK2	WNT7A
NEK1	PCSK9	PRPH2	SACS	SLC19A3	SPTA1	TMEM43	YARS2
NEK8	PCYT1A	PRSS56	SATB2	SLC22A5	SPTAN1	TMEM67	ZAP70
NF1	PDGFRA	PSEN1	SBF1	SLC25A12	SPTBN2	TMPRSS3	ZBTB18
NFASC	PDGFRB	PTCH1	SCN10A	SLC25A13	SPTBN4	TNFRSF1A	ZEB2
NHLRC1	PDX1	PTPN11	SCN11A	SLC25A19	SPTLC1	TNNT2	