

Invitae is a College of American Pathologists (CAP)-accredited and Clinical Laboratory Improvement Amendments (CLIA)-certified clinical diagnostic laboratory performing full-gene sequencing and deletion/duplication analysis using next-generation sequencing technology (NGS). Invitae's panel tests include:

- Full-gene sequencing: Covers clinically important regions of each gene, including coding exons, +/- 10 base pairs of adjacent intronic sequence (+/-20 bases for BRCA1 and BRCA2), and select noncoding variants.
- Deletion/duplication analysis: Detects most intragenic deletions and duplications at single exon resolution.
- Coverage: Our assay provides an average mean coverage depth of at least 350x.
- Confirmation: Using orthogonal technologies, Invitae confirms clinically significant findings that do not meet stringent NGS quality metrics.

For some genes, analysis may extend to the promoter region, include additional intronic variants, or be limited to targeted variants or exons. Details can be found at [www.invitae.com](http://www.invitae.com).

A2ML1	ADAMTS2	ALG2	AP5Z1	ATP7B	BCL10	CACNA1S
AARS	ADAR	ALG3	APC	ATP13A2	BCOR	CACNA2D1
ABAT	ADSL	ALG6	APOB	ATRX	BFSP1	CACNA2D2
ABCC9	AFF4	ALG8	APP	AUH	BFSP2	CACNB2
ABCD1	AGA	ALG9	AR	AXIN2	BICD2	CACNB4
ABCD4	AGK	ALG11	ARG1	B2M	BIN1	CALM1
ABCG5	AGL	ALG12	ARHGEF9	B3GALNT2	BLM	CALM2
ABCG8	AGPS	ALG13	ARHGEF15	B3GALT6	BLNK	CALM3
ABRAXAS1	AGRN	ALG14	ARL13B	B3GAT3	BLOC1S6	CALR3
ACAD8	AGXT	ALK	ARL6	B3GLCT	BMP4	CAPN3
ACADM	AHCY	ALMS1	ARL6IP1	B4GALNT1	BMPR1A	CARD11
ACADS	AHI1	ALS2	ARMC4	B4GALT1	BMPR1B	CARD14
ACADSB	AICDA	AMACR	ARSA	B4GALT7	BMPR2	CARD9
ACADVL	AIFM1	AMN	ARSB	B4GAT1	BRAF	CARS2
ACAT1	AIPL1	AMPD1	ARSE	B9D1	BRAT1	CASK
ACD	AIRE	AMPD2	ARSI	B9D2	BRCA1	CASP10
ACOX1	AK2	AMT	ARX	BAG3	BRCA2	CASP8
ACP5	AKAP9	ANK2	ASAH1	BAP1	BRIP1	CASQ2
ACSF3	AKT1	ANKRD1	ASL	BARD1	BSCL2	CASR
ACTA1	AKT2	ANKRD11	ASPA	BBS1	BTD	CAV1
ACTA2	AKT3	ANKS6	ASS1	BBS2	BTK	CAV3
ACTB	ALAD	ANO3	ATL1	BBS4	BUB1B	CBL
ACTC1	ALDH1A3	ANO5	ATL3	BBS5	C1GALT1C1	CBS
ACTG1	ALDH4A1	ANOS1	ATM	BBS7	C12orf57	CC2D2A
ACTN2	ALDH5A1	AP1S1	ATP1A2	BBS9	C12orf65	CCDC103
ACVR2B	ALDH7A1	AP3B1	ATP1A3	BBS10	C19orf12	CCDC114
ACVRL1	ALDH18A1	AP4B1	ATP2A1	BBS12	CA5A	CCDC151
ADA	ALDOA	AP4E1	ATP6AP2	BCKDHA	CACNA1A	CCDC39
ADA2	ADLOB	AP4M1	ATP6V0A2	BCKDHB	CACNA1C	CCDC40
ADAM17	ALG1	AP4S1	ATP7A	BCKDK	CACNA1H	CCDC65

# Gene List



CCDC78	CHRNA2	CPT1C	DBT	DOLK	EVC	FOLR1
CCM2	CHRNA4	CPT2	DCAF17	DPAGT1	EVC2	FOXC1
CCNO	CHRN1	CR2	DCDC2	DPM1	EXOSC3	FOXE3
CCT5	CHRN2	CRB1	DCLRE1B	DPM2	EXT1	FOXG1
CD247	CHRNA4	CREBBP	DCLRE1C	DPM3	EXT2	FOXH1
CD27	CHRNE	CRELD1	DCTN1	DRC1	EYA1	FOXN1
CD320	CHST14	CRTAP	DDC	DRD2	EYA4	FOXP3
CD3D	CHST3	CRX	DDHD1	DSC2	EZH2	FPR1
CD3E	CHST6	CRYAA	DDHD2	DSE	F2	FRRS1L
CD3G	CHSY1	CRYAB	DDOST	DSG2	F5	FTCD
CD40LG	CIITA	CRYBA1	DECR1	DSP	F9	FTL
CD79A	CIZ1	CRYBA4	DEPDC5	DST	FA2H	FUCA1
CD79B	CLCN1	CRYBB1	DES	DTNA	FADD	FUS
CD8A	CLCN4	CRYBB2	DHCR7	DYNC1H1	FAH	FYCO1
CDC73	CLN2 (TPP1)	CRYBB3	DHDDS	DYNC2H1	FAM126A	G6PC
CDH1	CLN3	CRYGB	DHH	DYRK1A	FANCA	G6PC3
CDK4	CLN5	CRYGC	DHTKD1	DYSF	FANCB	G6PD
CDKL5	CLN6	CRYGD	DIAPH1	EDA	FANCC	GAA
CDKN1B	CLN8	CRYGS	DICER1	EDAR	FANCD2	GABBR2
CDKN1C	CLPB	CSF2RA	DIS3L2	EDARADD	FANCE	GABRA1
CDKN2A	CNTN1	CSF3R	DKC1	EED	FANCF	GABRA6
CDON	CNTN2	CSPP1	DLAT	EEF1A2	FANCG	GABRB2
CEBPA	CNTNAP2	CSRP3	DLD	EFEMP2	FANCI	GABRB3
CEBPE	COASY	CSTB	DMD	EFHC1	FANCL	GABRD
CEP41	COG1	CTC1	DNAAF1	EGFR	FANCM	GABRG2
CEP57	COG2	CTDP1	DNAAF2	EGLN1	FARS2	GAD1
CEP83	COG4	CTF1	DNAAF3	EGR2	FAS	GAL
CEP104	COG5	CTLA4	DNAAF4	EHMT1	FASLG	GALC
CEP120	COG6	CTNNA1	DNAAF5	ELAC2	FASN	GALE
CEP164	COG7	CTNNA3	DNAH1	ELANE	FBN1	GALK1
CEP290	COG8	CTNS	DNAH5	ELN	FBN2	GALNS
CERS1	COL1A1	CTPS1	DNAH8	ELP1	FBP1	GALNT12
CFAP52	COL1A2	CTRC	DNAH11	EMD	FBXO7	GALNT3
CFAP53	COL3A1	CTSA	DNAI1	ENG	FBXO38	GALT
CFAP298	COL5A1	CTSC	DNAI2	ENO3	FERMT3	GAMT
CFL2	COL5A2	CTSD	DNAJB2	ENTPD1	FGD4	GAN
CFTR	COL6A1	CTSF	DNAJB6	EOGT	FGFR1	GARS
CHAT	COL6A2	CTSK	DNAJC5	EP300	FGFR2	GAS8
CHCHD2	COL6A3	CUBN	DNAJC6	EPCAM	FGFR3	GATA1
CHCHD10	COL12A1	CUL4B	DNAJC19	EPG5	FH	GATA2
CHD2	COLQ	CXCR4	DNAL1	EPHA2	FHL1	GATA4
CHD7	COPA	CYBA	DNM1	EPM2A	FHL2	GATA6
CHEK2	COQ4	CYBB	DNM2	ERCC4	FIG4	GATAD1
CHIT1	CORO1A	CYP1B1	DNMT1	ERF	FKBP14	GATM
CHKB	CP	CYP27A1	DNMT3A	ERLIN1	FKRP	GBA2
CHM	CPA6	CYP2U1	DNMT3B	ERLIN2	FKTN	GBE1
CHMP2B	CPLANE1	CYP7B1	DOCK2	ETFA	FLCN	GCDH
CHMP4B	CPOX	D2HGDH	DOCK7	ETFB	FLNA	GCH1
CHRM2	CPS1	DAG1	DOCK8	ETFDH	FLNC	GCNT2
CHRNA1	CPT1A	DBH	DOK7	ETHE1	FLRT1	GCSH

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INVITAE

GDAP1	GUSB	IER3IP1	JMJD1C	LAMA2	MARS	MSH2
GDF1	GYG1	IFIH1	JPH2	LAMA4	MASP1	MSH6
GDF2	GYS1	IFNGR1	JUP	LAMB2	MAT1A	MSX1
GDF3	GYS2	IFNGR2	KANSL1	LAMP2	MAT2A	MSX2
GDF6	HADH	IFT122	KAT6B	LAMTOR2	MATR3	MTHFR
GFI1	HADHA	IFT140	KBTBD13	LARGE1	MAX	MTM1
GFPT1	HADHB	IFT172	KCNA1	LAS1L	MBD5	MTMR2
GIF	HAMP	IFT80	KCNA2	LCA5	MC1R	MTO1
GJA1	HAND1	IGHMBP2	KCNA5	LCK	MCCC1	MTOR
GJA3	HARS	IGLL1	KCNB1	LDB3	MCCC2	MTR
GJA5	HAX1	IKBKB	KCNC1	LDHA	MCEE	MTRR
GJA8	HCFC1	IL10	KCND2	LDLR	MCIDAS	MUSK
GJB1	HCN1	IL10RA	KCND3	LDLRAP1	MCOLN1	MUT
GJB6	HCN4	IL10RB	KCNE1	LEFTY2	MDM2	MUTYH
GJC2	HDAC8	IL12B	KCNE2	LFNG	MECP2	MVK
GLA	HESX1	IL12RB1	KCNE3	LGI1	MED12	MYBPC3
GLB1	HEXA	IL17F	KCNE5	LIAS	MED13L	MYD88
GLDC	HEXB	IL17RA	KCNH2	LIG4	MED25	MYF6
GLI2	HFE	IL17RC	KCNH5	LIM2	MEF2C	MYH11
GLI3	HGD	IL1RN	KCNJ2	LIMS2	MEFV	MYH2
GLIS2	HGSNAT	IL21	KCNJ5	LIPA	MEGF10	MYH6
GLRA1	HIBCH	IL21R	KCNJ8	LITAF	MEGF8	MYH7
GLRB	HINT1	IL2RA	KCNJ10	LMBRD1	MEIS2	MYL2
GLUD1	HJV	IL2RG	KCNJ13	LMNA	MEN1	MYL3
GLUL	HLCS	IL36RN	KCNK3	LMNB2	MET	MYL4
GM2A	HMBS	IL7R	KCNMA1	LMOD3	MFN2	MYLK
GMPPA	HMGCL	ILK	KCNQ1	LPIN2	MFRP	MYLK2
GMPPB	HMGCS2	IMPDH1	KCNQ2	LRAT	MFSD8	MYOM1
GNAL	HNRNPA2B1	INF2	KCNQ3	LRBA	MGAT2	MYOT
GNAO1	HNRNPDL	INPP5E	KCNT1	LRP4	MIP	MYOZ2
GNB4	HNRNPU	INVS	KCTD17	LRRRC10	MITF	MYPN
GNE	HOGA1	IQCB1	KCTD7	LRRRC6	MKKS	NADK2
GNMT	HOXB13	IQSEC2	KDM5C	LRRK2	MKS1	NAGA
GNPAT	HPCA	IRAK4	KDM6A	LRSAM1	MLH1	NAGLU
GNPTAB	HPD	IRF6	KIAA0586	LTBP3	MLH3	NAGS
GNPTG	HPRT1	IRF7	KIF1A	LYST	MLYCD	NBN
GNS	HRAS	IRF8	KIF1B	MAB21L2	MMAA	NCF2
GOSR2	HSD17B10	ISG15	KIF1C	MAF	MMAB	NCF4
GPC3	HSD17B4	ISPD	KIF5A	MAG	MMACHC	NDRG1
GPD1L	HSF4	ITCH	KIF7	MAGT1	MMADHC	NEB
GPHN	HSPB1	ITGA2B	KIT	MALT1	MOCOS	NEBL
GREM1	HSPB3	ITGA7	KLHL40	MAN1B1	MOCOS1	NECAP1
GRHL3	HSPB8	ITGB2	KLHL41	MAN1B2	MOGS	NEDD4L
GRHPR	HSPD1	ITGB3	KMT2D	MANBA	MORC2	NEFL
GRIN1	HYAL1	ITK	KPNA7	MAOA	MPC1	NEK1
GRIN2A	IBA57	ITPA	KPTN	MAP2K1	MPDU1	NEK8
GRIN2B	ICOS	IVD	KRAS	MAP2K2	MPI	NEU1
GRN	IDH2	JAG1	KRIT1	MAP3K1	MPL	NEXMIF
GSS	IDS	JAGN1	L1CAM	MAP3K14	MPZ	NEXN
GUCY2D	IDUA	JAK3	L2HGDH	MAPT	MRE11	NF1

NF2	OPTN	PGM1	POGLUT1	PTPN11	RNASEH2B	SCN8A
NFAT5	ORAI1	PGM3	POLD1	PTPRC	RNASEH2C	SCN9A
NFIX	OTC	PHF6	POLE	PTS	RNF125	SDCCAG8
NFKB2	OTX2	PHGDH	POLG	PURA	ROGDI	SDHA
NFKBIA	OXCT1	PHKA1	POMGNT1	PXDN	RORC	SDHAF2
NFU1	P3H1	PHKA2	POMGNT2	PYGL	RPE65	SDHB
NGF	PACS1	PHKB	POMK	PYGM	RPGR	SDHC
NGLY1	PAH	PHKG2	POMT1	QARS	RPGRIP1	SDHD
NHEJ1	PALB2	PHOX2B	POMT2	QDPR	RPGRIP1L	SEC23A
NHLRC1	PALLD	PHYH	POR	RAB23	RPL11	SEC23B
NHP2	PANK2	PIGA	POT1	RAB27A	RPL26	SEMA3E
NHS	PAPSS2	PIGG	PPM1K	RAB3GAP2	RPL35A	SELENON
NIPA1	PARK7	PIGL	PPOX	RAB7A	RPL5	SERAC1
NIPBL	PARN	PIGM	PPT1	RAC2	RPN2	SERPINC1
NKX2-5	PAX2	PIGN	PQBP1	RAD21	RPS10	SERPINI1
NKX2-6	PAX6	PIGO	PRDM12	RAD50	RPS19	SETD2
NLRC4	PAX9	PIGQ	PRDM16	RAD51C	RPS24	SETX
NLRP12	PC	PIGT	PRDM8	RAD51D	RPS26	SGCA
NLRP3	PCBD1	PIGV	PREPL	RAF1	RPS6KA3	SGCB
NME8	PCCA	PIGW	PRF1	RAG1	RPS7	SGCD
NMNAT1	PCCB	PIK3AP1	PRICKLE1	RAG2	RRAS	SGCE
NOD2	PCDH19	PIK3CA	PRICKLE2	RANBP2	RSPH1	SGCG
NODAL	PCSK9	PIK3CD	PRIMA1	RANGRF	RSPH3	SGSH
NOP10	PDCD10	PIK3R1	PRKAG2	RAPSN	RSPH4A	SH2D1A
NOTCH1	PDE6D	PIK3R2	PRKAR1A	RARB	RSPH9	SH3BP2
NOTCH2	PDGFRA	PINK1	PRKCD	RASA1	RTEL1	SH3TC2
NPC1	PDGFRB	PITX2	PRKDC	RAX	RTN2	SHH
NPC2	PDHA1	PITX3	PRKG1	RB1	RUNX1	SHOC2
NPHP1	PDHB	PKD2	PRKN	RBCK1	RXYLT1	SIGMAR1
NPHP3	PDHX	PKHD1	PRKRA	RBFOX1	RYR1	SIK1
NPHP4	PDK3	PKP2	PRNP	RBFOX3	RYR2	SIL1
NPPA	PDLIM3	PLA2G6	PROC	RBM20	RYR3	SIX1
NPR2	PDP1	PLCB1	PRODH	RBM8A	SACS	SIX3
NPRL3	PEX1	PLCG2	PROS1	RD3	SALL1	SKI
NR0B1	PEX2	PLEC	PRPH2	RDH12	SALL4	SLC12A5
NR2F2	PEX3	PLEKHG5	PRPS1	RECQL4	SAMHD1	SLC13A5
NR5A1	PEX5	PLEKHM2	PRRT2	REEP1	SATB2	SLC16A2
NRAS	PEX6	PLN	PRSS1	REEP2	SBF2	SLC17A5
NRXN1	PEX7	PLOD1	PRSS56	RELN	SCARB2	SLC19A3
NSD1	PEX10	PLP1	PRX	RET	SCN10A	SLC22A5
NSDHL	PEX12	PMM2	PSAP	RETREG1	SCN11A	SLC25A1
NT5C2	PEX13	PMP22	PSAT1	RFT1	SCN1A	SLC25A12
NTRK1	PEX14	PMS2	PSEN1	RFX5	SCN1B	SLC25A13
NUS1	PEX16	PNKD	PSEN2	RFXANK	SCN2A	SLC25A15
OAT	PEX19	PNKP	PSMB8	RFXAP	SCN2B	SLC25A19
OCRL	PEX26	PNP	PSPH	RHOH	SCN3A	SLC25A20
OFD1	PFKM	PNPLA2	PSTPIP1	RINT1	SCN3B	SLC25A22
OGDH	PFN1	PNPLA6	PTCH1	RIT1	SCN4A	SLC25A46
OPA3	PGAM2	PNPO	PTCH2	RMRP	SCN4B	SLC26A2
OPLAH	PGAP1	POFUT1	PTEN	RNASEH2A	SCN5A	SLC29A3

SLC2A1	SP110	SYNE2	TMEM43	UBQLN2	ZIC3
SLC2A10	SPAG1	SYNGAP1	TMEM67	UMPS	ZMYND10
SLC2A2	SPART	SYNJ1	TMEM70	UNC13D	ZNF423
SLC3A1	SPAST	SZT2	TMPO	UNC93B1	
SLC5A1	SPATA5	TAP1	TNFRSF1A	UNG	
SLC5A7	SPATA7	TAP2	TNFRSF4	UPF3B	
SLC6A1	SPG7	TAPBP	TNFRSF13B	USP8	
SLC6A3	SPG11	TARDBP	TNFRSF13C	VAMP1	
SLC6A5	SPG21	TAT	TNFSF12	VAPB	
SLC6A8	SPINK1	TAZ	TNNC1	VAX1	
SLC6A9	SPINK5	TBC1D24	TNNI3	VCL	
SLC7A7	SPR	TBK1	TNNT1	VCP	
SLC7A9	SPRED1	TBL1XR1	TNNT2	VHL	
SLC9A6	SPTAN1	TBX1	TNPO3	VIM	
SLC33A1	SPTLC1	TBX3	TOR1A	VMA21	
SLC35A1	SPTLC2	TBX5	TOR1AIP1	VPS13B	
SLC35A2	SQSTM1	TCAP	TP53	VPS35	
SLC35A3	SRD5A2	TCF4	TP63	VPS37A	
SLC35C1	SRD5A3	TCN1	TPK1	VPS45	
SLC35D1	SRPX2	TCN2	TPM1	VRK1	
SLC37A4	SRY	TCOF1	TPM2	VSX2	
SLC39A13	SSR4	TCTN1	TPM3	WAS	
SLC40A1	ST3GAL3	TCTN2	TPP2	WASHC5	
SLC52A1	ST3GAL5	TCTN3	TRAF3	WDPCP	
SLC52A2	STAC3	TDRD7	TRAF3IP2	WDR19	
SLC52A3	STAT1	TECPR2	TRAPPC11	WDR34	
SLMAP	STAT2	TERC	TRDN	WDR35	
SLX4	STAT3	TERT	TREX1	WDR45	
SMAD3	STAT5B	TFG	TRIM2	WDR60	
SMAD4	STIM1	TFR2	TRIM32	WIPF1	
SMAD6	STK11	TGFB2	TRIP11	WNK1	
SMAD9	STK4	TGFB3	TRNT1	WNT10A	
SMARCA4	STRA6	TGFBR1	TRPM4	WRN	
SMARCAL1	STRADA	TGFBR2	TRPS1	WT1	
SMARCB1	STT3A	TGIF1	TRPV4	WWOX	
SMARCE1	STT3B	TH	TSC1	XIAP	
SMC1A	STX1B	THAP1	TSC2	XDH	
SMC3	STX11	TIA1	TTC21B	XPNPEP3	
SMCHD1	STXBP1	TICAM1	TTC7A	XRCC2	
SMN1, SMN2	STXBP2	TINF2	TTC8	XYLT1	
SMPD1	SUCLA2	TLR3	TTN	YARS	
SNAP25	SUCLG1	TMC6	TTR	ZAP70	
SNCA	SUFU	TMC8	TUBB4A	ZBTB24	
SNTA1	SUMF1	TMEM127	TULP1	ZDHHC9	
SNX27	SUN1	TMEM138	TUSC3	ZEB2	
SOD1	SUN2	TMEM165	TWIST1	ZFPM2	
SOS1	SUOX	TMEM173	TXNRD2	ZFR	
SOS2	SURF1	TMEM216	TYK2	ZFYVE26	
SOX2	SYN1	TMEM231	UBA1	ZFYVE27	
SOX9	SYNE1	TMEM237	UBE3A	ZIC2	