

Appendix C: Pre-defined driver gene panel. Chosen if i) present in the COSMIC Cancer Gene Consensus or ii) known causal role in the development of preinvasive airway disease/ LUSC

Genes	ALPK2	ATP1A1	BCLAF1	CASP3	CD74	CHD8
A1CF	AMER1	ATP2B3	BCOR	CASP8	CD79A	CHIC2
ABI1	ANK1	ATP5B	BCORL1	CASP9	CD79B	CHST11
ABL1	ANK3	ATR	BCR	CBFA2T3	CD80	CHUK
ABL2	APC	ATRX	BHMT2	CBFB	CD86	CIC
ACKR3	APOL2	AXIN1	BIRC3	CBL	CDC27	CIITA
ACO1	AR	AXIN2	BIRC6	CBLB	CDC73	CLIP1
ACSL3	ARAF	AZGP1	BMP5	CBLC	CDH1	CLP1
ACSL6	ARHGAP26	B2M	BRAF	CCDC120	CDH10	CLTC
ACVR1	ARHGAP35	BABAM2	BRCA1	CCDC6	CDH11	CLTCL1
ACVR1B	ARHGAP5	BAP1	BRCA2	CCNB1IP1	CDH17	CNBD1
ACVR2A	ARHGEF10	BARD1	BRD3	CCNC	CDK12	CNBP
ACVR2B	ARHGEF10L	BAX	BRD4	CCND1	CDK4	CNKSR1
ADNP	ARHGEF12	BAZ1A	BTG1	CCND2	CDK6	CNOT3
AFDN	ARID1A	BCAS3	BTK	CCND3	CDKN1A	CNTNAP2
AFF1	ARID1B	BCL10	C15orf65	CCNE1	CDKN1B	CNTRL
AFF3	ARID2	BCL11A	C3orf70	CCR4	CDKN2A	COL1A1
AFF4	ARID5B	BCL11B	CACNA1D	CCR7	CDKN2C	COL2A1
AKAP9	ARNT	BCL2	CALR	CD1D	CDX2	COL3A1
AKT1	ASPCR1	BCL2L12	CAMTA1	CD209	CEBPA	COL5A1
AKT2	ASXL1	BCL3	CANT1	CD274	CEP76	COL5A3
AKT3	ASXL2	BCL6	CANX	CD276	CEP89	COX6C
ALDH2	ATF1	BCL7A	CAP2	CD28	CHCHD7	CPEB3
ALK	ATIC	BCL9	CARD11	CD40	CHD2	CREB1
ALKBH6	ATM	BCL9L	CARS	CD70	CHD4	CREB3L1

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CREB3L2	DDR2	ELF4	EZH2	FLI1	GNAS	HLA-DMA
CREBBP	DDX10	ELK4	EZR	FLNA	GNB1	HLA-DMB
CRLF2	DDX3X	ELL	FAM131B	FLT3	GNPTAB	HLA-DOA
CRNKL1	DDX5	ELN	FAM135B	FLT4	GOLGA5	HLA-DOB
CRTC1	DDX6	ELOC	FAM166A	FNBP1	GOPC	HLA-DPA1
CRTC3	DEK	EML4	FAM47C	FOXA1	GOT1	HLA-DPB1
CSF1R	DGCR8	EP300	FAS	FOXL2	GPC5	HLA-DQA1
CSF3R	DIAPH1	EPAS1	FAT1	FOXO1	GPHN	HLA-DQA2
CSMD3	DICER1	EPHA2	FAT3	FOXO3	GPS2	HLA-DQB1
CTCF	DIS3	EPHA3	FAT4	FOXO4	GRIN2A	HLA-DRA
CTNNA2	DNAH12	EPHA7	FBLN2	FOXP1	GRM3	HLA-DRB1
CTNNB1	DNAJB1	EPS15	FBXO11	FOXQ1	GUSB	HLA-E
CTNND1	DNER	ERBB2	FBXW7	FOXR1	H3F3A	HLA-F
CTNND2	DNM2	ERBB3	FCGR2B	FRMD7	H3F3B	HLA-G
CUL3	DNMT3A	ERBB4	FCRL4	FSTL3	HERPUD1	HLA-H
CUL4B	DROSHA	ERC1	FES	FUBP1	HEY1	HLF
CUX1	DUX4L1	ERCC2	FEV	FUS	HHLA2	HMGA1
CXCR4	EBF1	ERG	FGFBP1	GAS7	HIF1A	HMGA2
CYLD	ECT2L	ESR1	FGFR1	GATA1	HIP1	HMGN2P46
CYP2C8	EED	ETNK1	FGFR1OP	GATA2	HIST1H1E	HNF1A
CYSLTR2	EGFR	ETV1	FGFR2	GATA3	HIST1H3B	HNRNPA2B1
DAXX	EIF1AX	ETV4	FGFR3	GLI1	HIST1H4E	HOOK3
DCAF12L2	EIF2S2	ETV5	FGFR4	GMPS	HIST1H4I	HOXA11
DCC	EIF3E	ETV6	FHIT	GNA11	HLA-A	HOXA13
DCTN1	EIF4A2	EWSR1	FIP1L1	GNA13	HLA-B	HOXA9
DDIT3	ELF3	EZH1	FKBP9	GNAQ	HLA-C	HOXC11

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HOXC13	IPO7	KDM6A	LCTL	MAP3K13	MLLT11	MYO5A
HOXD11	IRF1	KDR	LEF1	MAP4K3	MLLT3	MYOCD
HOXD13	IRF2	KDSR	LEPROTL1	MAPK1	MLLT6	MYOD1
HRAS	IRF3	KEAP1	LGALS3	MAX	MN1	N4BP2
HSP90AA1	IRF4	KEL	LHFPL6	MB21D2	MNX1	NAB2
HSP90AB1	IRF5	KIAA1549	LIFR	MBD1	MORC4	NACA
HSPA5	IRF6	KIF5B	LMNA	MDM2	MPL	NBEA
ID3	IRF7	KIT	LMO1	MDM4	MPO	NBPF1
IDH1	IRF8	KLF4	LMO2	MDS2	MRTFA	NCKIPSD
IDH2	IRS4	KLF6	LPP	MECOM	MSH2	NCOA1
IDO1	ISX	KLHL8	LRIG3	MED12	MSH6	NCOA2
IGF2BP2	ITGAV	KLK2	LRP1B	MED23	MSI2	NCOA4
IGH	ITGB7	KMT2A	LRRC17	MEN1	MSN	NCOR1
IGK	ITK	KMT2B	LSM14A	MET	MTCP1	NCOR2
IGL	ITPKB	KMT2C	LYL1	MGA	MTOR	NDRG1
IKBKB	JAK1	KMT2D	LZTR1	MGMT	MUC1	NF1
IKBKG	JAK2	KNL1	MACC1	MICA	MUC16	NF2
IKZF1	JAK3	KNSTRN	MAF	MICAL2	MUC4	NFATC2
IL10RB	JAZF1	KRAS	MAFB	MICB	MXRA5	NFE2L2
IL2	JUN	KTN1	MALAT1	MITF	MYB	NFIB
IL21R	KAT6A	LARP4B	MALT1	MLF1	MYC	NFKB2
IL6ST	KAT6B	LASP1	MAML2	MLH1	MYCL	NFKBIE
IL7R	KAT7	LATS1	MAP2K1	MLL	MYCN	NIN
ING1	KCNJ5	LATS2	MAP2K2	MLL2	MYD88	NKX2-1
INPPL1	KDM5A	LCK	MAP2K4	MLLT1	MYH11	NONO
INTS12	KDM5C	LCP1	MAP3K1	MLLT10	MYH9	NOS2

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NOTCH1	PABPC1	PIK3CB	PRKAR1A	RAF1	RPN1	SFPQ
NOTCH2	PAFAH1B2	PIK3R1	PRKCB	RALGDS	RPS15	SFRP4
NPM1	PATZ1	PIM1	PRPF40B	RANBP2	RPS2	SFRS2
NR4A3	PAX3	PLAG1	PRRX1	RAP1GDS1	RSBN1L	SGK1
NRAS	PAX5	PLCG1	PSIP1	RARA	RSPO2	SH2B3
NRG1	PAX7	PLCG2	PTCH1	RASA1	RSPO3	SH3GL1
NSD1	PAX8	PML	PTEN	RB1	RUNX1	SHTN1
NSD2	PBRM1	POLD1	PTK6	RBM10	RUNX1T1	SIRPA
NSD3	PBX1	POLE	PTPN11	RBM15	RXRA	SIRT4
NT5C2	PCBP1	POLG	PTPN13	REL	S100A7	SIX1
NTN4	PCM1	POLQ	PTPN6	RET	SACS	SIX2
NTRK1	PDAP1	POT1	PTPRB	RFWD3	SALL4	SKI
NTRK3	PDCD1LG2	POU2AF1	PTPRC	RGPD3	SDC4	SLC1A3
NUMA1	PDCD2L	POU2F2	PTPRD	RGS7	SDHA	SLC26A3
NUP210L	PDE4DIP	POU5F1	PTPRK	RHEB	SELP	SLC2A3
NUP214	PDGFB	PPARG	PTPRT	RHOA	SEPTIN12	SLC34A2
NUP98	PDGFRA	PPFIBP1	PVR	RHOH	SEPTIN5	SLC44A3
NUTM1	PDGFRB	PPM1D	PWWP2A	RIT1	SEPTIN6	SLC45A3
NUTM2B	PDIA3	PPP2R1A	QKI	RMI2	SEPTIN9	SLC4A5
NUTM2D	PDSS2	PPP6C	RAB40A	RNF213	SERPINB13	SMAD2
ODAM	PDYN	PRCC	RABEP1	RNF43	SET	SMAD3
OLIG2	PER1	PRDM1	RAC1	ROBO2	SETBP1	SMAD4
OMA1	PHF6	PRDM16	RAD17	ROS1	SETD1B	SMARCA4
OMD	PHOX2B	PRDM2	RAD21	RPL10	SETD2	SMARCB1
OTUD7A	PICALM	PREX2	RAD51B	RPL22	SETDB1	SMARCD1
P2RY8	PIK3CA	PRKACA	RAET1E	RPL5	SF3B1	SMC1A

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SMC3	STAT6	TENT4B	TP53	USP44	ZNF471
SMO	STIL	TENT5C	TP53BP1	USP6	ZNF479
SND1	STK11	TERT	TP63	USP8	ZNF483
SNX25	STK19	TET1	TPM3	VAV1	ZNF521
SNX29	STRN	TET2	TPM4	VHL	ZNF620
SOCS1	STX2	TFE3	TPR	VTCN1	ZNF750
SOS1	SUFU	TFEB	TPX2	VTI1A	ZNRF3
SOX17	SUZ12	TFG	TRA	WASF3	ZRANB3
SOX2	SYK	TFPT	TRAF3	WDCP	ZRSR2
SOX21	TAF15	TFRC	TRAF7	WIF1	
SPECC1	TAL1	TGFBR2	TRB	WNK2	
SPEN	TAL2	THRAP3	TRD	WT1	
SPOP	TAP1	TIMM17A	TRIM23	WWTR1	
SRC	TAP2	TLX1	TRIM24	XPO1	
SRGAP3	TAPBP	TLX3	TRIM27	YWHAE	
SRSF2	TBC1D12	TMPRSS2	TRIM33	ZBTB16	
SRSF3	TBL1XR1	TNC	TRIP11	ZCCHC8	
SS18	TBX3	TNF	TRRAP	ZEB1	
SS18L1	TCEA1	TNFAIP3	TSC1	ZFHX3	
SSX1	TCF12	TNFRSF14	TSC2	ZMYM2	
SSX2	TCF3	TNFRSF17	TSHR	ZMYM3	
SSX4	TCF7L2	TNFSF14	TTLL9	ZNF180	
STAG1	TCL1A	TNFSF18	TXNDC8	ZNF331	
STAG2	TCP11L2	TNFSF4	U2AF1	ZNF384	
STAT3	TDRD10	TNFSF9	UBR5	ZNF429	
STAT5B	TEC	TOP1	ULBP1	ZNF454	

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