Cancer Gene List – II (C)

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Abstract: There are thousands of genes that are related to the cancer development. This article gives the genes that are supposed as cancer genes. This is cancer gene list part 2 (C).
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Cell proliferation is regulated during the body growth and the cancer could happen if the regulation is out of control. Viruses can be used to introduce the reprogramming factors into adult cells, However, there is a risk that the virus used to introduce the stem cell factors sometimes possibly causes cancers. Controlling genes on and off is central to the biological process. The most serious medical conditions, such as cancer and birth defects, are due to abnormal cell division and differentiation. Cancer cell lines can be used to find potential anti-tumor drugs. To control the differentiation of stem cell precisely is important in the drug development (Ma, et al, 2014).

There are thousands of genes that are related to the cancer development. Here it gives 1400 genes that are supposed as cancer genes (Table 1) (Atlas of Genetics and Cytogenetics in Oncology and Haematology, 2015). HGNC is responsible for approving unique symbols and names for human loci, including protein coding genes, ncRNA genes and pseudogenes, to allow unambiguous scientific communication. The HUGO Gene Nomenclature Committee is the only worldwide authority that assigns standardized nomenclature to human genes. The HGNC approves both a short-form abbreviation known as a gene symbol, and also a longer and more descriptive name. Each symbol is unique and the committee ensures that each gene is only given one approved gene symbol. This allows for clear and unambiguous reference to genes in scientific communications, and facilitates electronic data retrieval from databases and publications. In preference, symbols also maintain parallel construction for different members of a gene family and can also be used for orthologous genes in other vertebrate species (HGNC, 2015).

Table 1. Cancer gene list (2) (C)

Gene	Location	HGNC (Hugo) Name
C11ORF30 (Alias)	11q13.5	C11orf30
C11orf30	11q13.5	C11orf30 (chromosome 11 open reading frame 30)
C12orf5	12p13.32	C12orf5 (chromosome 12 open reading frame 5)
C15orf1 (Alias)	15q23	ANP32A
C15orf55 (Alias)	15q14	NUTM1
C16orf57 (Alias)	16q21	USB1
C17orf37 (Alias)	17q12	MIEN1
C1orf12 (Alias)	1q42.2	EGLN1
C1orf178 (Alias)	1p13.2	BCL2L15
C1orf215 (Alias)	1p36.11	STMN1
C1orf28 (Alias)	1q31.2	CDC73
C1orf4 (Alias)	1p36.11	ARID1A
C20orf139 (Alias)	20p13	SRXN1

C20orf1 (Alias)	20q11.21	TPX2
C20orf2 (Alias)	20q11.21	TPX2
C20orf45 (Alias)	20q13.32	GNAS
C20orf47 (Alias)	20q11.22	ERGIC3
C21orf1 (Alias)	21q22.3	PTTG1IP
C21orf3 (Alias)	21q22.3	PTTG1IP
C2/C4gnT (Alias)	15q22.2	GCNT3
C2GnT2 (Alias)	15q22.2	GCNT3
C2GnT-M (Alias)	15q22.2	GCNT3
C2orf2 (Alias)	2p21	EML4
C2TA (Alias)	16p13.13	CIITA
C33 (Alias)	11p11.2	CD82
C35 (Alias)	17q12	MIEN1
C3-C5 (Alias)	21q21.3	ADAMTS1
C3G (Alias)	9q34.13	RAPGEF1
C3orf8 (Alias)	3p22.2	CTDSPL
C3S (Alias)	11q13.5	B3GNT6
C3Xkine (Alias)	16q21	CX3CL1
C4.4A (Alias)	19q13.31	LYPD3
C4ST-1 (Alias)	12q23.3	CHST11
C4ST1 (Alias)	12q23.3	CHST11
C4ST (Alias)	12q23.3	CHST11
C6.1B (Alias)	Xq28	MTCP1
C6orf173 (Alias)	6q22.32	CENPW
C6orf210 (Alias)	6q21	PDSS2
C6orf30 (Alias)	6p21.33	EHMT2
C7 (Alias)	4q21.1	CXCL10
CA125 (Alias)	19p13.2	MUC16
Ca[1] (Alias)	1q21.3	S100A10
CAB1 (Alias)	17q12	STARD3
Cachectin (Alias)	6p21.33	TNF
CADASIL (Alias)	19p13.12	NOTCH3
Cadherin-1 (Alias)	16q22.1	CDH1
Cadherin-associated protein, beta (Alias)	3p22.1	CTNNB1
CADM4	19q13.31	CADM4 (cell adhesion molecule 4)
CAGA (Alias)	1q21.3	S100A8
CAGB (Alias)	1q21.3	S100A9
CAGE-1 (cancer-associated gene-1) (Alias)	6p24.3	CAGE1
CAGE1	6p24.3	CAGE1 (cancer-associated gene-1)
CAGH1A (Alias)	12p13.31	ZNF384
CAGH1 (Alias)	12p13.31	ZNF384
CAGH32 (Alias)	12q24.33	EP400
CAIN (Alias)	9q34.13	NUP214

CAIR-1 (Alias)	10q26.11	BAG3
CAK (Alias)	6p21.33	DDR1
C-AKT (Alias)	14q32.33	AKT1
CAL1L (Alias)	1q21.3	S100A10
CALM (Alias)	11q14.2	PICALM
Calmbp1 (Alias)	1q31.3	ASPM
Calpactin (Alias)	1q21.3	S100A10
CAML1 (Alias)	Xq28	L1CAM
CAMTA1	1p36.31	CAMTA1 (calmodulin binding transcription activator 1)
CAN19 (Alias)	1q21.3	S100A2
CAN (Alias)	9q34.13	NUP214
CANDF6 (Alias)	6p12.2	IL17F
CAP1 (Alias)	16p11.2	PRSS8
CAP-1 (Alias)	14q32.32	TRAF3
CAP20 (Alias)	6p21.2	CDKN1A
CAP43 (Alias)	8q24.22	NDRG1
CAP4 (Alias)	2q33.1	CASP8
CAPG	2p11.2	CAPG (capping protein (actin filament), gelsolin-like)
CAPL (Alias)	1q21.3	S100A4
CAR (Alias)	3q21.1	CASR
CAR (Alias)	17q24.2	PRKAR1A
CARD10	22q13.1	CARD10 (caspase recruitment domain family, member 10)
CARD12 (Alias)	2p22.3	NLRC4
CARD2 (Alias)	16q22.1	NOL3
CARD5 (Alias)	16p11.2	PYCARD
CARD8	19q13.33	CARD8 (caspase recruitment domain family, member 8)
CARDINAL (Alias)	19q13.33	CARD8
CARMA3 (Alias)	22q13.1	CARD10
CARMEN (Alias)	1p22.3	BCL10
CARS	11p15.4	CARS (cysteinyj-tRNA synthetase)
CART1 (Alias)	17q11.2	TRAF4
CART (Alias)	5q13.2	CARTPT
CARTPT	5q13.2	CARTPT (CART Prepropeptide)
CAS11 (Alias)	1p36.22	CASZ1
CAS1 (Alias)	16q23.1	BCAR1
CAS (Alias)	16q23.1	BCAR1
CAS (Alias)	20q13.13	CSE1L
CAS (Alias)	11q12.1	CTNND1
CASC3	17q21.1	CASC3 (cancer susceptibility candidate 3)

CASC5	15q15.1	CASC5 (cancer susceptibility candidate 5)
CASH (Alias)	2q33.1	CFLAR
CASIL (Alias)	19p13.12	NOTCH3
CASP1	11q22.3	CASP1 (caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase))
CASP-7 (Alias)	10q25.3	CASP7
CASP7	10q25.3	CASP7 (caspase 7, apoptosis-related cysteine peptidase)
Casp-8 (Alias)	2q33.1	CASP8
CASP8AP1 (Alias)	2q33.1	CFLAR
CASP8	2q33.1	CASP8 (Caspase 8, Apoptosis-Related Cysteine Peptidase)
CASP-9 (caspase 9, apoptosis-related cysteine peptidase) (Alias)	1p36.21	CASP9
CASP9	1p36.21	CASP9 (caspase 9, apoptosis-related cysteine peptidase)
CASP (Alias)	7q22.1	CUX1
Casper (Alias)	2q33.1	CFLAR
CASR	3q21.1	CASR (Calcium-Sensing Receptor)
CASS1 (Alias)	16q23.1	BCAR1
CASZ1	1p36.22	CASZ1 (castor zinc finger 1)
CaT1 (Alias)	7q34	TRPV6
Catabolin (Alias)	2q13	IL1B
CATL (Alias)	9q21.33	CTSL
CATL (Alias)	7q34	TRPV6
CAV1	7q31.2	CAV1 (caveolin 1, caveolae protein, 22kDa)
CAV (Alias)	7q31.2	CAV1
CBAS3 (Alias)	8q12.3	CYP7B1
CBFA1 (Alias)	6p21.1	RUNX2
CBFA2 (core binding factor A2) (Alias)	21q22.12	RUNX1
CBFA2T1 (CBFA2 translocated to, 1) (Alias)	8q21.3	RUNX1T1
CBFA2T3	16q24.3	CBFA2T3 (core-binding factor, runt domain, alpha subunit 2; translocated to, 3)
CBFb (Alias)	16q22.1	CBFB
CBFB	16q22.1	CBFB (subunit b of core binding factor)
CBL2 (Alias)	11q23.3	CBL
CBL-3 (Alias)	19q13.32	CBLC

CBLb (Alias)	3q13.11	CBLB
CBLB	3q13.11	CBLB (Cas-Br-M (murine) ecotropic retroviral transforming sequence b)
CBLc (Alias)	19q13.32	CBLC
CBL	11q23.3	CBL (Cas-Br-M (murine) ecotropic retroviral transforming sequence)
CBLC	19q13.32	CBLC (Cas-Br-M (murine) ecotropic retroviral transforming sequence c)
CBL	11q23.3	CBL (Cas-Br-M (murine) ecotropic retroviral transforming sequence)
CBP35 (Alias)	14q22.3	LGALS3
CBP (Alias)	4q23	EIF4E
CBP (cAMP Response Element-Binding Protein (CREB)-binding protein) (Alias)	16p13.3	CREBBP
CBX7	22q13.1	CBX7 (chromobox homolog 7)
CC3 (Alias)	11p15.1	HTATIP2
C-C (Alias)	2q35	CXCR1
C-C-CKR-1 (Alias)	2q35	CXCR1
CC-CKR-2 (Alias)	3p21.31	CCR2
C-C CKR-9 (Alias)	3p21.31	CCR9
CC-CKR-9 (Alias)	3p21.31	CCR9
CCDC6	10q21.2	CCDC6 (coiled-coil domain containing 6)
CCK4 (Alias)	6p21.1	PTK7
CCL28 (Alias)	5q13.3	ENC1
CCN1 (Alias)	1p22.3	CYR61
CCN2 (Alias)	6q23.2	CTGF
CCN5 (Alias)	20q13.12	WISP2
CCN6 (Alias)	6q21	WISP3
CCNA1	13q13.3	CCNA1 (cyclin A1)
CCNB1	5q13.2	CCNB1 (cyclin B1)
CCNB (Alias)	5q13.2	CCNB1
CCND1	11q13.3	CCND1 (B-cell leukemia/lymphoma 1)
CCR1	3p21.31	CCR1 (chemokine (C-C motif) receptor 1)
CCR2A (Alias)	3p21.31	CCR2
CCR2B (Alias)	3p21.31	CCR2
CCR2	3p21.31	CCR2 (chemokine (C-C motif) receptor 2)
CCR-9 (Alias)	3p21.31	CCR9

CCR9	3p21.31	CCR9 (chemokine (C-C motif) receptor 9)
CCRK (Alias)	9q22.1	CDK20
CCS-3 (Alias)	6q13	EEF1A1
CCS3 (Alias)	6q13	EEF1A1
CCSP1 (Alias)	15q25.1	KIAA1199
CD100 (Alias)	9q22.2	SEMA4D
CD105 (Alias)	9q34.11	ENG
CD107B (Alias)	8p11.21	IDO1
CD109	6q13	CD109 (CD109 molecule)
CD10 (Alias)	3q25.2	MME
CD115 (Alias)	5q32	CSF1R
CD117 (Alias)	4q12	KIT
CD118 (Alias)	5p13.1	LIFR
CD123 (Alias)	Xp22.33	IL3RA
CD127 (Alias)	5p13.2	IL7R
CD128 (Alias)	2q35	CXCR1
CD135 (Alias)	13q12.2	FLT3
CD138 (Alias)	2p24.1	SDC1
CD140A (Alias)	4q12	PDGFRA
CD140B (Alias)	5q32	PDGFRB
CD146 (Alias)	11q23.3	MCAM
CD148 (Alias)	11p11.2	PTPRJ
CD151 antigen (Alias)	11p15.5	CD151
CD151	11p15.5	CD151 (CD151 molecule (Raph blood group))
CD156B (Alias)	2p25.1	ADAM17
CD156c (Alias)	15q21.3	ADAM10
CD164L1 (Alias)	11q13.2	CD248
CD167 (Alias)	6p21.33	DDR1
CD171 (Alias)	Xq28	L1CAM
CD181 (Alias)	2q35	CXCR1
CD182 (Alias)	Xq13.1	CXCR3
CD183 (Alias)	Xq13.1	CXCR3
CD191 (Alias)	3p21.31	CCR1
CD192 (Alias)	3p21.31	CCR2
CD200	3q13.2	CD200 (CD200 molecule)
CD202b (Alias)	9p21.2	TEK
CD202B (Alias)	9p21.2	TEK
CD206 (Alias)	10p12.33	MRC1
CD221 (Alias)	15q26.3	IGF1R
CD233 (Alias)	17q21.31	SLC4A1
CD23A (Alias)	19p13.2	FCER2

CD23 (Alias)	19p13.2	FCER2
CD246 (Alias)	2p23.2	ALK
CD248	11q13.2	CD248 (CD248 molecule, endosialin)
CD253 (Alias)	3q26.31	TNFSF10
CD269 (Alias)	16p13.13	TNFRSF17
CD26 (Alias)	2q24.2	DPP4
CD27BP (Alias)	14q32.33	SIVA1
CD314 (Alias)	12p13.2	KLRK1
CD316 (Alias)	1q23.2	IGSF8
CD318 (Alias)	3p21.31	CDCP1
CD324 (Alias)	16q22.1	CDH1
CD326 (Alias)	2p21	EPCAM
CD32 (Alias)	1q23.3	FCGR2B
CD331 (CD331 antigen) (Alias)	8p11.23	FGFR1
CD332 (Alias)	10q26.13	FGFR2
CD334 (Alias)	5q35.2	FGFR4
CD336 (Alias)	6p21.1	NCR2
CD340 (Alias)	17q12	ERBB2
CD38	4p15.32	CD38 (CD38 molecule)
CD40bp (Alias)	14q32.32	TRAF3
CD44	11p13	CD44 (CD44 molecule (Indian blood group))
CD44R (Alias)	11p13	CD44
CD49f (Alias)	2q31.1	ITGA6
CD53	1p13.3	CD53 (CD53 molecule)
CD53 glycoprotein (Alias)	1p13.3	CD53
CD53 tetraspan antigen (Alias)	1p13.3	CD53
CD54 (Alias)	19p13.2	ICAM1
CD59	11p13	CD59 (CD59 molecule, complement regulatory protein)
CD62E (Alias)	1q24.2	SELE
CD66a (Alias)	19q13.2	CEACAM1
CD71 (Alias)	3q29	TFRC
CD73 (Alias)	6q14.3	NT5E
CD74	5q32	CD74 (CD74 molecule, major histocompatibility complex, class II invariant chain)
CD81P3 (Alias)	1q23.2	IGSF8
CD82	11p11.2	CD82 (CD82 molecule)
CD87 (Alias)	19q13.31	PLAUR
CD90 (Alias)	11q23.3	THY1

CD97	19p13.12	CD97 (CD97 molecule)
CD9	12p13.31	CD9 (CD9 molecule)
CDA	1p36.12	CDA (Cytidine Deaminase)
CDB1 (Alias)	5q31.1	TGFBI
CDC18L (Alias)	17q21.2	CDC6
CDC20A (Alias)	1p34.2	CDC20
CDC20	1p34.2	CDC20 (cell division cycle 20 homolog (S. cerevisiae))
CDC25A2 (Alias)	3p21.31	CDC25A
CDC25A	3p21.31	CDC25A (Cell division cycle 25A)
CDC25 (Alias)	15q25.1	RASGRF1
CDC25L (Alias)	15q25.1	RASGRF1
CDC42	1p36.12	CDC42 (cell division cycle 42 (GTP binding protein, 25kDa))
CDC42Hs (Alias)	1p36.12	CDC42
CDC46 (Alias)	22q12.3	MCM5
CDC6	17q21.2	CDC6 (cell division cycle 6 homolog (S. cerevisiae))
CDC73	1q31.2	CDC73 (cell division cycle 73, Paf1/RNA polymerase II complex component, homolog (S. cerevisiae))
CDCH (Alias)	9q22.1	CDK20
CDCP1	3p21.31	CDCP1 (CUB domain containing protein 1)
CDCREL (Alias)	22q11.21	SEPT5
CDD (Alias)	1p36.12	CDA
CDF (Alias)	7p15.3	IL6
CDG2 (Alias)	5q31.1	TGFBI
CDGG1 (Alias)	5q31.1	TGFBI
CDH13	16q23.3	CDH13 (cadherin 13, H-cadherin (heart))
CDH16 (Alias)	8q22.1	CDH17
CDH17	8q22.1	CDH17 (cadherin 17, LI cadherin (liver-intestine))
CDH1	16q22.1	CDH1 (cadherin 1, type 1, E-cadherin (epithelial))
CDH3	16q22.1	CDH3 (Cadherin 3, Type 1, P-Cadherin (Placental))
CDHE (Alias)	16q22.1	CDH1
CDHF5 (Alias)	18q12.1	DSG2

CDHF7 (Alias)	4q35.2	FAT1
CDHH (Alias)	16q23.3	CDH13
CDHP (Alias)	16q22.1	CDH3
CDHR8 (Alias)	4q35.2	FAT1
CDHS (Alias)	2q36.1	PAX3
CDK20	9q22.1	CDK20 (cell cycle related kinase)
CDK4	12q14.1	CDK4 (cyclin-dependent kinase 4)
CDK4I (Alias)	9p21.3	CDKN2A
CDK4I (Alias)	9p21.3	CDKN2B
CDKN1A	6p21.2	CDKN1A (cyclin-dependent kinase inhibitor 1A)
CDKN1B	12p13.1	CDKN1B (cyclin-dependent kinase inhibitor 1 B)
CDKN2a (Alias)	9p21.3	CDKN2A
CDKN2A	9p21.3	CDKN2A (cyclin dependent kinase 2a / p16)
CDKN2B	9p21.3	CDKN2B (cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4))
CDMT (Alias)	16q12.1	CYLD
CDN1 (Alias)	6p21.31	BAK1
CDP1 (Alias)	7q22.1	CUX1
CDP (Alias)	7q22.1	CUX1
CDP/Cut (Alias)	7q22.1	CUX1
CDR (cyclin D related gene), (Alias)	8q21.3	RUNX1T1
CDS1 (Alias)	22q12.1	CHEK2
CDT1	16q24.3	CDT1 (chromatin licensing and DNA replication factor 1)
CDW127 (Alias)	5p13.2	IL7R
CDw128a (Alias)	2q35	CXCR1
CDw199 (Alias)	3p21.31	CCR9
CDw44 (Alias)	11p13	CD44
CDW44 (Alias)	11p13	CD44
CDw90 (Alias)	11q23.3	THY1
CDX2	13q12.2	CDX2 (caudal-related homeobox 2)
CDX3 (Alias)	13q12.2	CDX2
CEACAM1	19q13.2	CEACAM1 (carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein))
C/EBPa (Alias)	19q13.1	CEBPA
CEBPA	19q13.1	CEBPA (CCAAT/enhancer binding protein (C/EBP), alpha)

CEBP (Alias)	19q13.1	CEBPA
C/EBP zeta (CCAAT/enhancer binding protein zeta) (Alias)	12q13.3	DDIT3
CED (Alias)	19q13.2	TGFB1
CEK3 (Alias)	10q26.13	FGFR2
CEK (chicken embryo kinase) (Alias)	8p11.23	FGFR1
CELF2	10p14	CELF2 (CUGBP, Elav-like family member 2)
Cellular-E10 (Alias)	1p22.3	BCL10
CENF (Alias)	1q41	CENPF
CENPF	1q41	CENPF (centromere protein F, 350/400ka (mitosin))
CENPW	6q22.32	CENPW (centromere protein W)
CENTB4 (Alias)	8q24.21	ASAP1
CENTG1 (Centaurin , gamma1) (Alias)	12q14.1	AGAP2
CEP57	11q21	CEP57 (centrosomal protein 57kDa)
CEPR (Alias)	7p22.3	GPER1
CEPTRL2 (Alias)	17p13.1	CLDN7
C-ERBA-2 (Alias)	3p24.2	THRB
C-ERBA-BETA (Alias)	3p24.2	THRB
CEV14 (clonal evolution related gene on chromosome 14) (Alias)	14q32.12	TRIP11
CF5 (Alias)	5q31.2	CXXC5
CFAG (Alias)	1q21.3	S100A8
CFAG (Alias)	1q21.3	S100A9
CFLAR	2q33.1	CFLAR (CASP8 and FADD-like apoptosis regulator)
C-FMS (Alias)	5q32	CSF1R
CGI-127 (Alias)	2p23.1	YPEL5
CGI-45 (Alias)	1q32.1	ADIPOR1
CGI45 (Alias)	1q32.1	ADIPOR1
CGI-46 (Alias)	19q13.33	RUVBL2
CGI-54 (Alias)	20q11.22	ERGIC3
CGI-56 (Alias)	22q13.31	PARVB
CGLA (Alias)	1q21.3	S100A8
CGLB (Alias)	1q21.3	S100A9
CG-NAP (Alias)	7q21.2	AKAP9
Chaperonin 60kDa (CPN60) (Alias)	2q33.1	HSPD1
CHD5 (Alias)	20q12	CHD6
CHD5	1p36.31	CHD5 (chromodomain helicase DNA binding protein 5)
CHD-6 (Alias)	20q12	CHD6
CHD6	20q12	CHD6 (chromodomain helicase DNA binding protein 6)

CHE-1 (Alias)	17q12	AATF
CHE1 (Alias)	17q12	AATF
CHEK2	22q12.1	CHEK2 (CHK2 checkpoint homolog (S. pombe))
CHET9 (Alias)	17q11.2	SUZ12
CHETK-alpha (Alias)	11q13.2	CHKA
CHFR	12q24.33	CHFR (Checkpoint with fork-head associated and ring finger)
CHH (Alias)	9p13.3	RMRP
CHIC2	4q12	CHIC2 (cystein-rich hydrophobic domain 2)
CHIMP (Alias)	4q21.1	RCHY1
CHK2 (Alias)	22q12.1	CHEK2
CHKA	11q13.2	CHKA (choline kinase alpha)
CHK (Alias)	11q13.2	CHKA
CHN (Alias)	9q22.33	NR4A3
CHNG1 (Alias)	14q31.1	TSHR
CHOP-10 (C/EBP homologous protein 10) (Alias)	12q13.3	DDIT3
CHOP (C/EBP homologous protein) (Alias)	12q13.3	DDIT3
CHST11	12q23.3	CHST11 (carbohydrate (chondroitin 4) sulfotransferase 11)
C-IAP1 (Alias)	11q22.2	BIRC2
CIITA	16p13.13	CIITA (MHC class II transactivator)
CILD22 (Alias)	3p21.31	ZMYND10
CIP1 (CDK- interacting protein) (Alias)	6p21.2	CDKN1A
CIP29 (Alias)	12q13.2	SARNP
CIP2A (Alias)	3q13.13	KIAA1524
CIPER (Alias)	1p22.3	BCL10
CIS1 (cytokine-inducible SH2 protein 1) (Alias)	16p13.13	SOCS1
CIS-2, Cytokine-inducible SH2 protein 2 (Alias)	12q22	SOCS2
CIS2, STAT induced STAT inhibitor-2 (Alias)	12q22	SOCS2
CIS3 (Alias)	17q25.3	SOCS3
CIS-4 (Alias)	18q22.2	SOCS6
CIS4 (Alias)	18q22.2	SOCS6
CISH1 (Alias)	16p13.13	SOCS1
Cish2, STAT-induced STAT inhibitor 2 (Alias)	12q22	SOCS2
Cish3 (Alias)	17q25.3	SOCS3
CISP (corticotropin-induced secreted protein) (Alias)	6q27	THBS2
CITED2	6q24.1	CITED2 (Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2)

CITED4	1p34.2	CITED4 (Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 4)
CIZ (Alias)	12p13.31	ZNF384
CK1 (Alias)	5q32	CSNK1A1
CK (Alias)	11q13.2	CHKA
CKBBP1 (Alias)	3q23	RNF7
CKBBP2 (Alias)	19p13.2	GADD45GIP1
Ckbeta-15 (Alias)	3p21.31	CCR9
CKI (Alias)	11q13.2	CHKA
CKI-alpha (Alias)	5q32	CSNK1A1
CKN1 (Alias)	5q12.1	ERCC8
CKN2 (Alias)	10q11.23	ERCC6
CKR-1 (Alias)	3p21.31	CCR1
CKR1 (Alias)	3p21.31	CCR1
CKR-1 (Alias)	2q35	CXCR1
CKR2A (Alias)	3p21.31	CCR2
CKR2 (Alias)	3p21.31	CCR2
CKR2B (Alias)	3p21.31	CCR2
CKR-L2 (Alias)	Xq13.1	CXCR3
CKS-1 (Alias)	1q21.3	CKS1B
CKS1 (Alias)	1q21.3	CKS1B
CKS1B	1q21.3	CKS1B (CDC28 protein kinase regulatory subunit 1B)
CKS2	9q22.2	CKS2 (CDC28 protein kinase regulatory subunit 2)
CKSHS2 (Alias)	9q22.2	CKS2
CL100 (Alias)	5q35.1	DUSP1
CLAN (Alias)	2p22.3	NLRC4
CLAP (Alias)	1p22.3	BCL10
CLARP (Alias)	2q33.1	CFLAR
CLATP (Alias)	17q21.2	ACLY
CLDN10	13q32.1	CLDN10 (claudin 10)
CLDN4	7q11.23	CLDN4 (Claudin-4)
CLDN6	16p13.3	CLDN6 (claudin 6)
CLDN-7 (Alias)	17p13.1	CLDN7
CLDN7	17p13.1	CLDN7 (claudin 7)
CLDN9	16p13.3	CLDN9 (claudin 9)
CLEC13D (Alias)	10p12.33	MRC1
CLEC1B	12p13.2	CLEC1B (C-Type Lectin Domain Family 1, Member B)

CLEC2 (Alias)	12p13.2	CLEC1B
CLEC2B (Alias)	12p13.2	CLEC1B
CLEC4J (Alias)	19p13.2	FCER2
CLG4A (Collagenase Type IV-A), (Alias)	16q12.2	MMP2
CLG4B (Collagenase Type IV-B), (Alias)	20q13.12	MMP9
CLG4 (Collagenase Type IV), (Alias)	16q12.2	MMP2
CLG4 (Collagenase Type IV), (Alias)	20q13.12	MMP9
CLH-17 (Alias)	17q23.1	CLTC
CLH-22 (Alias)	22q11.21	CLTCL1
CLI (Alias)	8p21.1	CLU
CLIC1	6p21.33	CLIC1 (chloride intracellular channel 1)
CLIC4	1p36.11	CLIC4 (chloride intracellular channel 4)
CLIC4L (Alias)	1p36.11	CLIC4
CLIM2 (Alias)	10q24.32	LDB1
Clox (Alias)	7q22.1	CUX1
CLP11 (Alias)	1q21.3	S100A10
CLR2.1 (Alias)	2p22.3	NLRC4
CLSPN	1p34.3	CLSPN (claspin)
CLTC	17q23.1	CLTC (clathrin heavy polypeptide)
CLTCL1	22q11.21	CLTCL1 (clathrin heavy polypeptide-like 1)
CLTCL (Alias)	22q11.21	CLTCL1
CLTD (Alias)	22q11.21	CLTCL1
CLU	8p21.1	CLU (clusterin)
C-Maf (Alias)	16q23.2	MAF
C-mer (Alias)	2q13	MERTK
C-MET-related tyrosine kinase (RON) (Alias)	3p21.31	MST1R
CMH-1 (Alias)	10q25.3	CASP7
CMKAR1 (Alias)	2q35	CXCR1
CMKAR3 (Alias)	Xq13.1	CXCR3
CMKBR1 (Alias)	3p21.31	CCR1
CMKBR2 (Alias)	3p21.31	CCR2
CMKBR9 (Alias)	3p21.31	CCR9
CMKOR1 (Alias)	2q37.3	ACKR3
CMKRL2 (Alias)	7p22.3	GPER1
CMM3 (Alias)	12q14.1	CDK4
CMM8 (Alias)	3p14.1	MITF
CMM8 (Alias)	11q14.3	TYR
CMT2F (Alias)	7q11.23	HSPB1

CMT2L (Alias)	12q24.23	HSPB8
CMT4D (Alias)	8q24.22	NDRG1
CMYA2 (Alias)	1q21.1	PDE4DIP
C-myb (Alias)	6q23.3	MYB
Cmyb (Alias)	6q23.3	MYB
C-MYC (Alias)	8q24.21	MYC
CNC1 (Alias)	17q24.2	PRKAR1A
CNSA2 (Alias)	9p22.2	SH3GL2
CO-029 (Alias)	12q21.1	TSPAN8
CO17-1A (Alias)	2p21	EPCAM
COCA1 (Alias)	2p21	MSH2
COCA2 (Alias)	3p22.2	MLH1
COL16A1	1p35.2	COL16A1 (collagen, type XVI, alpha 1)
COL1A1	17q21.33	COL1A1 (collagen, type I, alpha 1)
COL1A2	7q21.3	COL1A2 (collagen, type I, alpha 2)
Conjugase (Alias)	8q12.3	GGH
COPEB (Core promoter binding protein) (Alias)	10p15.1	KLF6
COPS2	15q21.1	COPS2 (COP9 constitutive photomorphogenic homolog subunit 2 (Arabidopsis))
COQ10D3 (Alias)	6q21	PDSS2
Core 3 synthase (Alias)	11q13.5	B3GNT6
COVA1 (Alias)	Xq26.1	ENOX2
COX-2 (Alias)	1q31.1	PTGS2
COX2 (Cyclooxygenase 2) (Alias)	1q31.1	PTGS2
COX6C	8q22.2	COX6C (cytochrome c oxidase subunit VIc)
COY1 (Alias)	7q22.1	CUX1
CP-10 (Alias)	1q21.3	S100A8
CP7A (Alias)	8q12.1	CYP7A1
CP7B (Alias)	8q12.3	CYP7B1
CPA6 (Alias)	19q13.2	CYP2A6
CPAMD7 (Alias)	6q13	CD109
CPBP (Alias)	10p15.1	KLF6
CPEB4	5q35.2	CPEB4 (cytoplasmic polyadenylation element binding protein 4)
CPETR1 (Alias)	7q11.23	CLDN4
CPETR, (Alias)	7q11.23	CLDN4
CPETRL2 (Alias)	17p13.1	CLDN7
CPETRL3 (Alias)	13q32.1	CLDN10
CPHD1 (Alias)	3p11.2	POU1F1

CPI-B (Alias)	21q22.3	CSTB
CPLA2 (Alias)	1q31.1	PLA2G4A
CPM	12q15	CPM (carboxypeptidase M)
CPSB (Alias)	8p23.1	CTSB
CPSB (Alias)	15q25.1	CTSH
CRAF1 (Alias)	14q32.32	TRAF3
CRAF (Alias)	3p25.2	RAF1
CRC18 (Alias)	18q21.2	DCC
CRCR1 (Alias)	18q21.2	DCC
CRD-BP (Alias)	17q21.32	IGF2BP1
CRDBP (Alias)	17q21.32	IGF2BP1
CRDGF (Alias)	4q13.3	AREG
CREB1 (Alias)	2q31.1	ATF2
CREB2 (Alias)	2q31.1	ATF2
CREB-2 (Alias)	22q13.1	ATF4
CREB2 (Alias)	22q13.1	ATF4
CREB3L2	7q33	CREB3L2 (cAMP responsive element binding protein 3-like 2)
CREBBP	16p13.3	CREBBP (CREB binding protein)
CRE-BP1 (Alias)	2q31.1	ATF2
CREBP1 (Alias)	2q31.1	ATF2
CREST (Alias)	20q13.33	SS18L1
CRF2-9 (Alias)	1p36.11	IL22RA1
CRIF1 (Alias)	19p13.2	GADD45GIP1
CRKAS (Alias)	16q23.1	BCAR1
CRK	17p13.3	CRK (v-crk sarcoma virus CT10 oncogene homolog (avian))
CRKII (Alias)	17p13.3	CRK
CRM1 (Alias)	2p15	XPO1
CRP-ductin (mouse) (Alias)	10q26.13	DMBT1
CRS2 (Alias)	5q35.2	MSX2
CRTC1	19p13.11	CRTC1 (CREB regulated transcription coactivator 1)
CRTC2	1q21.3	CRTC2 (CREB regulated transcription coactivator 2)
CRYA2 (Alias)	11q23.1	CRYAB
CRYAB	11q23.1	CRYAB (crystallin, alpha B)
CSA (Cockayne syndrome A) (Alias)	5q12.1	ERCC8
CSB (Cockayne syndrome B) (Alias)	10q11.23	ERCC6
CSBP1 (Alias)	6p21.31	MAPK14

CSBP2 (Alias)	6p21.31	MAPK14
CSBP (Alias)	9q21.32	HNRNPK
CSC-21K (Alias)	17q25.3	TIMP2
CSD1 (Alias)	5q31.1	TGFBI
CSD2 (Alias)	5q31.1	TGFBI
CSD3 (Alias)	5q31.1	TGFBI
CSDA2 (Alias)	1p34.2	YBX1
CSD (Alias)	5q31.1	TGFBI
CSDB (Alias)	1p34.2	YBX1
CSDD2 (Alias)	6q16.3	LIN28B
CSE1 (Alias)	20q13.13	CSE1L
CSE1L	20q13.13	CSE1L (CSE1 chromosome segregation 1-like (yeast))
CSF-1-R (Alias)	5q32	CSF1R
CSF1R	5q32	CSF1R (colony stimulating factor 1 receptor, formerly McDonough feline sarcoma viral (v-fms) oncogene homolog)
CSFR (Alias)	5q32	CSF1R
CSMF (Alias)	9q22.33	NR4A3
CSN2 (Alias)	15q21.1	COPS2
CSNK1A1	5q32	CSNK1A1 (casein kinase 1, alpha 1)
CSPB1 (Alias)	6p21.31	MAPK14
CSPG2 (Alias)	5q14.2	VCAN
CSPG8 (Alias)	11p13	CD44
CST6 (Alias)	21q22.3	CSTB
CST6	11q13.1	CST6 (cystatin E/M)
CSTA	3q21.1	CSTA (cystatin A (stefin A))
CST (Alias)	1p36.22	CASZ1
CSTB	21q22.3	CSTB (cystatin B (stefin B))
CSVP (Alias)	2p25.1	ADAM17
CSX1 (Alias)	5q35.1	NKX2-5
CSX (Alias)	5q35.1	NKX2-5
CT120 (Alias)	17p13.3	FAM57A
CT130 (Alias)	22q11.22	PRAME
CT1.3 (Alias)	Xq28	MAGEA3
CT29 (Alias)	15q15.1	CASC5
CT5.2 (Alias)	Xp11.22	SSX2
CT58 (Alias)	20q13.12	WISP2
CT63 (Alias)	Xq28	PASD1
CT78 (Alias)	Yp11.2	TSPY1

CT80 (Alias)	8p21.3	PIWIL2
CTC75 (Alias)	22q13.2	XRCC6
CTCBF (Alias)	22q13.2	XRCC6
CTCF	16q22.1	CTCF (CCCTC-binding factor (zinc finger protein))
CTDSPL	3p22.2	CTDSPL (CTD (Carboxy-Terminal Domain, RNA Polymerase II, Polypeptide A) Small Phosphatase-Like)
CTEN (Alias)	17q21.2	TNS4
CTGF	6q23.2	CTGF (connective tissue growth factor)
CTGF-L (Alias)	20q13.12	WISP2
CTHBP (Alias)	15q23	PKM
CTHRC1	8q22.3	CTHRC1 (Collagen Triple Helix Repeat Containing 1)
CTIP2 (Ctip-2) chicken ovalbumin upstream promoter transcription factor (COUP-TF)-interacting protein (Alias)	14q32.2	BCL11B
CTIP (Alias)	18q11.2	RBBP8
CTLA3 (Alias)	5q11.2	GZMA
CTLA8 (Alias)	6p12.2	IL17A
CTNNB1	3p22.1	CTNNB1 (Catenin, beta-1)
CTNND1	11q12.1	CTNND1 (catenin (cadherin-associated protein), delta 1)
CTNND (Alias)	11q12.1	CTNND1
CTPA (Alias)	1p36.13	EPHA2
CTPP1 (Alias)	1p36.13	EPHA2
CTPP2 (Alias)	11q23.1	CRYAB
CTSB	8p23.1	CTSB (cathepsin B)
CTSH	15q25.1	CTSH (cathepsin H)
CTSL1 (Alias)	9q21.33	CTSL
CTSL	9q21.33	CTSL (cathepsin L1)
CUG2 (Alias)	6q22.32	CENPW
CUGBP2 (Alias)	10p14	CELF2
CUTL1 (Alias)	7q22.1	CUX1
CUX1	7q22.1	CUX1 (cut-like homeobox 1)
CUX (Alias)	7q22.1	CUX1
Cux/CDP (Alias)	7q22.1	CUX1
CWS4 (Alias)	10q23.31	KLLN
CX3CL1	16q21	CX3CL1 (chemokine (C-X3-C motif) ligand 1)

CXC3 (Alias)	16q21	CX3CL1
CXC3C (Alias)	16q21	CX3CL1
CXCL10	4q21.1	CXCL10 (chemokine (C-X-C motif) ligand 10)
CXCL17	19q13.2	CXCL17 (chemokine (C-X-C motif) ligand 17)
CXCL4 (Alias)	4q13.3	PF4
CXCL4L1 (Alias)	4q13.3	PF4V1
CXCL4V1 (Alias)	4q13.3	PF4V1
CXCL5	4q13.3	CXCL5 (chemokine (C-X-C motif) ligand 5)
CXCR1	2q35	CXCR1 (chemokine (C-X-C motif) receptor 1)
CXC-R3 (Alias)	Xq13.1	CXCR3
CXCR-3 (Alias)	Xq13.1	CXCR3
CXCR3	Xq13.1	CXCR3 (chemokine (C-X-C motif) receptor 3)
CXCR7 (chemokine (C-X-C motif) receptor 7) (Alias)	2q37.3	ACKR3
CXXC5	5q31.2	CXXC5 (CXXC finger protein 5)
CXXC9 (Alias)	19p13.2	DNMT1
CYLD1 (Alias)	16q12.1	CYLD
CYLD	16q12.1	CYLD (cylindromatosis (turban tumor syndrome))
CYLDI (Alias)	16q12.1	CYLD
CYP2A3 (Alias)	19q13.2	CYP2A6
CYP2A6	19q13.2	CYP2A6 (cytochrome P450, family 2, subfamily A, polypeptide 6)
CYP2A (Alias)	19q13.2	CYP2A6
CYP2W1	7p22.3	CYP2W1 (cytochrome P450, family 2, subfamily W, polypeptide 1)
CYP4B1	1p33	CYP4B1 (cytochrome P450, family 4, subfamily B, polypeptide 1)
CYP7A1	8q12.1	CYP7A1 (cytochrome P450, family 7, subfamily A, polypeptide 1)
CYP7 (Alias)	8q12.1	CYP7A1
CYP7B1	8q12.3	CYP7B1 (cytochrome P450, family 7, subfamily B, polypeptide 1)
CYP7B (Alias)	8q12.3	CYP7B1
CYP8A1 (Alias)	20q13.13	PTGIS

CYP8 (Alias)	20q13.13	PTGIS
CYPIIA6 (Alias)	19q13.2	CYP2A6
CYPIIW1 (Alias)	7p22.3	CYP2W1
CYPIVB1 (Alias)	1p33	CYP4B1
CYPVII (Alias)	8q12.1	CYP7A1
CYR61	1p22.3	CYR61 (cysteine-rich, angiogenic inducer, 61)
Cystatin-6 (Alias)	11q13.1	CST6
Cystatin-A (Alias)	3q21.1	CSTA
Cystatin-AS (Alias)	3q21.1	CSTA
Cystatin-B (Alias)	21q22.3	CSTB
Cystatin-E (Alias)	11q13.1	CST6
Cystatin E/M (Alias)	11q13.1	CST6
Cystatin M (Alias)	11q13.1	CST6
Cytochrome c oxidase polypeptide VIc precursor (Alias)	8q22.2	COX6C
Cytotactin (Alias)	9q33.1	TNC
CYTSB (Alias)	17p11.2	SPECC1

There are thousands of genes that are related to the cancer development. There are 1400 genes that are supposed as cancer genes (Ma, et al, 2014b).

References

1. Atlas of Genetics and Cytogenetics in Oncology and Haematology. Genes in cancer. http://atlasgeneticsoncology.org/Indexbyalpha/idxa_E.html. 2015.
2. HGNC. HUGO Gene Nomenclature Committee. http://www.genenames.org. 2015.
3. Ma H, Ma M. Stem Cell Introduction. *Stem Cell* 2014;5(2):1-10.
4. Ma H, Ma M, Yang Y. **Cancer Gene List.** Cancer Biology 2014;4(4):66-93]. (ISSN:2150-1041). http://www.cancerbio.net. 10. doi:10.7537/marscbj040414.10. b
5. National Center for Biotechnology Information, U.S. National Library of Medicine**.** http://www.ncbi.nlm.nih.gov/pubmed. 2014.
6. Wikipedia. The free encyclopedia. http://en.wikipedia.org. 2014.

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