

**Table-S1:** 80 meta-drug agents

Candidate drug agents Name	Reference
5_Fluorouracil, Adriamycin, Bleomycin, Bleomycin_Sulfate, Brivanib,Celecoxib, Cetuximab, Chlorambucil, Ciclopirox, Curcumin, Cyclophosphamide, Decitabine, Docetaxel, Doxil, Doxorubicin, Eribulin_Mesylate, Erlotinib, toposide, Everolimus, Exatecan, Fluorouracil, Fucoxanthin, Gefitinib, Geldanamycin, Gemcitabine, Hycamtin, Ifosfamide, Imatinib, Irinotecan, LY900009, Lapatinib, MK1775, Melphalan, Mesna, Methotrexate, Mitolactol, Mitomycin_C, Nelfinavir, Olaparib, Paclitaxel, Pazopanib, Piperlongumine, Rucaparib, Sizofiran, Sorafenib, Sunitinib, TNP_470, Temsirolimus, Thioridazine, Tirapazamine, Topotecan, Topotecan_Hydrochloride, Trastuzumab, Triapine, Veliparib, Vincristine, Vinorelbine, Vorinostat, amifostine, apigenin, belotecan, bendamustine, cabazitaxel, camptothecin, carboplatin, chrysin, cisplatin, gimeracil, hydralazine, hydroxyurea, pemetrexed, pralatrexate, resveratrol, tegafur, thioguanosine, thrombospondin_1, trichostatin_A, valproate, vedotin	[1–24]

**Table S2:** Different key protein lists for CC infection published by different research articles in different international reputed journals

Author	Hub Genes	Common hub genes with at least 5 articles	Common hub genes with at least 6 articles
(Venkataramnan and Binti Zainol Izam Khan 2020)[25]	AURKA, UBE2C, TPX2, MCM5, GINS2		
(Y. Mei et al. 2020)[14]	APOBEC3B, DSG2, CXCL8, ABCA8, PLAGL1		
(Jinhui Liu et al. 2019)[15]	EPHX2, RMI2		
(Qiu et al. 2020)[16]	RRM2, CDC45, GINS2, HELLS, KNTC1, MCM2, MYBL2, PCNA, RAD54 L, RFC4, RFC5, TK1, TOP2A, TYMS		
(Meneur et al. 2021)[17]	FASN, HK2, ACACB, PIF1, COX7A1, CKMT2, CPT1B, PDK4, DNA2, and COX4I2		
(X. Wu et al. 2019)[26]	TSPO, CCND1, FOS, CDK1, TOP2A, CCNB1, PCNA, BIRC5, MAD2L1		
(J. Mei et al. 2020)[27]	RIPOR2, CXCL8		
(Yi et al. 2020)[28]	CDK1, CCNB1, ITGB1, FN1, MMP9, STAT1		
(Deng, Zhu, and Huang 2016)[29]	GPS1, CCDC65, SLC9A7, VARS, SNX3, ENPP4, RGS7, LOC125943, LOC143903, LOC166602, BICC1, LOC253956, LOC220362, LOC206117, ADA, NAV1, LEF1		
(H. ju Yang et al. 2020)[30]	TYMS, MCM2, HELLS, TOP2A, CXCL8		
(J. Wang et al. 2020)[31]	DSG2, MMP1, SPP1, MCM2		
(Jinhui Liu, Yang, et al. 2020)[32]	EZH2, FLT1, GAPDH		
(Ouyang et al. 2020)[33]	SNRPA, CCDC12		
(H. Chen et al. 2020)[34]	KNTC1	AURKA,	
(H. Xue et al. 2021)[35]	CDC45, GINS2, MCM2, PCNA	PCNA,	
(Zhao et al. 2020)[36]	CDC6, CDK1, CDC45, BUB1, TOP2A, MCM4, CCNB2, CCNB1	CCNB1,	CCNB1,
(Ma et al. 2020)[37]	ESR1, EPB41L3, EDNRB, ID4, PLAC8	CDC45,	CDC45, MCM2
(Mallik et al. 2020)[38]	PAIP2, GRWD1, VPS4B, CRADD, LLPH, MRPL35, FAM177A1, STAT4, ASPSCR1, FABP7	MCM2,	TOP2A, CDK1
(Jinhui Liu, Li, et al. 2020)[39]	ACKR1	TOP2A, CDK1	
(Tu et al. 2021)[40]	RFC5, POLE3, RAD51, RMI1, PALB2, HDAC1, MCM4, ESR1, FOS, E2F1		
(K. Wu et al. 2018)[41]	PCNA, CDK2, VEGFA, PIK3CA		
(Jinhui Liu, Wu, et al. 2020)[42]	CD1C, CD6		
(Jiamei Liu, Liu, and Yang 2021)[43]	NDC80, TIPIN, MCM3, MCM6, POLA1, PRC1		
(Z. Xu et al. 2017)[44]	CDK1, TOP2A, MCM2, AURKA, KIF20A, ESR1		
(Y. Liu et al. 2019)[45]	CCNA2, CDK1, CCND1, FGF2, IGF1, BCL2, VEGFA		
(J. M. Xue et al. 2020)[46]	TOP2A, ECT2, RRM2, ANLN, NEK2, ASPM, BUB1B, CDK1, DTL, PRC1		
(M. Wang et al. 2018)[47]	MCM2, MMP2, COL1A1, JUN		
(Yuan et al. 2020)[48]	TOP2A, AURKA, CHEK1, KIF11, MCM4, MKI67, DTL, FOXM1, SMC4, FBXO5,		
(Mousavi et al. 2020)[49]	CDK1, PLK1		
(Xi Zhang and Wang 2019)[50]	SMYD2, EGLN1, TNFRSF10D, FUT11, SYTL3, MMP8, EREG		

(He et al. 2021)[51]	CDC45
(Q. Chen et al. 2018)[52]	TP53, MMP1, NOTCH1, SMAD4, NFKB1
(Shiyan Li et al. 2021)[53]	SLC25A5, ENO1, ANLN, RIBC2, PTTG1, MCM5
(Fu, Wu, and Xue 2018)[54]	ARFGAP3
(B. Wu and Xi 2021b)[55]	CDC45, ORC1, RPA1, CDT1, TARDBP, RBMX, SRSF3, SRSF1, RFC5, RFC2, MSH6, DTL, MSH2
(Meng et al. 2020)[56]	DSG2, ITM2A, CENPM, RIBC2, MEIS2
(Ding et al. 2020)[57]	PTK2, NRPI, PRKAA1, HMGCS1
(Shufeng Li et al. 2020)[58]	CCNB1
(B. Wu and Xi 2021a)[59]	NUSAP1, TOP2A, KIF2C, NDC80, ASPM, KIF20A, CDK1, KIF11, BIRC5, MCM2, CHEK1
(Wen, Liu, and Cui 2020)[60]	BRCA1, CDCA8, ASPM, CDC45, RAD51, HMMR, CENPF, EXO1, DTL, ZWINT
(Suman and Mishra 2018)[61]	TOP2A, BIRC5, AURKA, CCNB2
(Xue Zhang et al. 2020)[62]	ASPM, CDC45, CDC7, CENPO, PRIM2, RFC4, EXO1, TOP2A, CENPQ, RAD54L, ZWILCH, NCAPH, KIAA0101, TOPBP1
(Sun et al. 2019)[63]	TYMS, SASH1, CDK1, AURKA
(Oany et al. 2021)[64]	PTPRC, ITGAM, IL10, TYROBP, ITGB2, CCR5, ITGAX, CSF1R, LILRB2, CXCR4, STAT3, and CYBB
(Xiao et al. 2021)[65]	RFC4, ATAD2, TRIP13, NUF2, FOXM1, ECT2, KIF14, CDK2, KNTC1, DNA2.
(Yu et al. 2018)[66]	IGF2R, DNAJC6, FZD4, CBL, CLTC, ARPC3, VAMP2, ITGB3, VAMP4, ITGB1, MAPK8, KIF2A, CLASP1, SMC3, STAG2, STAG1, H2AFZ, RBBP4, UBE2D3
(Xiaoyu Zhang et al. 2019)[67]	JUN, DCN, THBS1, HLA-DRA, EDN1, TIMP3, TGFB2, OAS3, OASL, OAS1, PDGFB, MMP1, EGR1, SDC4, SERPINE1
(F. Xu, Shen, and Xu 2021)[68]	CCR7, CD3D, CD3E, ITGB2, FAM133A, TP53
(Jiang et al. 2021)[69]	APOD, CXCL8, MMP1, MMP3, PLOD2, PTGDS, SNX10, SPP1
(C. Yang, Xu, and Jin 2016)[70]	PBX1, LAMC2
(Luo et al. 2021)[71]	CDK1, BUB1, KIF11, NDC80, BUB1B, CCNB2, PCNA, CCNB1, MAD2L1 and CDCA8,
(Tong et al. 2021)[72]	RAD23A, PGD, ITPA, IDH1, THBS1
(Z. Zhang et al. 2021)[73]	SELL, CX3CR1, FCGR2B, CD38, IL15, HLA-DRA, CCL8, CD79A, HLA-DMA, HLA-DPA1

**Table-S3.** List of 116 genes that were identified as upregulated or downregulated using the GSE6791 GSE27678, GSE63514, and GSE9750 microarray datasets.

Type of DEGs	Differentially expressed genes (DEGs)
Downregulated DEGs	ENDOU, HOPX, CRNN, MAL, UPK1A, EMP1, EDN3, SLC27A6, KRT1, GYS2, ESR1, ALOX12, KRT2, HSPB8, EREG, KLK12, CRISP3, CFD, HPGD, PDGFD, GREB1, APOD, AR, KRT4, AQP1, SYNGR1, PEG3, TGFB3, CYP2B6, NDN, ABCA8, SPON1, FAM107A, DACH1, SORBS1, IGFBP5, SLIT2, CYP2B7P
Upregulated DEGs	CDKN2A, CHAF1A, WHSC1, MCM2, NEK2, DTL, MCM5, GINS2, RAD54L, KIF18B, KNTC1, FOXM1, AURKA, DSG2, TYMS, MCM6, GTSE1, GINS1, UBE2C, ECT2, SPAG5, KIF4A, MCM7, KIF2C, KIF14, TIMELESS, TPX2, MELK, FANCG, RFC4, CENPI, PLOD2, CDC20, EZH2, TOP2A, CDK1, ATAD2, RRM2, BIRC5, LOC101928615, FNDC3B, ATP2C1, FEN1, FANCI, WDHD1, ZWINT, ATP13A3, CENPF, NEMP1, MCM4, SMC4, PRC1, GMNN, ASPM, DHFR, MCM3, RAD51AP1, POLQ, SMS, TOPBP1, KIF20A, GMPS, CENPN, NCAPG2, BRCA1, HJURP, DLGAP5, NUSAP1, TTK, CDC7, NCAPG, SHCBP1, HMMR, CKS2, RFC5, CCNB1, KRT17, JUP

**Table-S4:** The top 20 significantly (p-value<0.001) enriched GO functions and KEGG pathways by cDEGs involving KGs with CC diseases.

Biological Process				
Term	Count	PValue	cDEGs	FDR
GO:0006260~DNA replication	18	1.58E-16	RFC5, GINS2, FEN1, RFC4, RRM2, MCM7, CDC7, BRCA1, CHAF1A, MCM3, TIMELESS, CDK1, MCM4, MCM5, TOPBP1, MCM6, DTL, MCM2	1.43E-13
GO:0051301~cell division	22	7.94E-15	SPAG5, UBE2C, NCAPG2, KIF14, NCAPG, CDC7, SMC4, ZWINT, AURKA, CDC20, TPX2, CENPF, CCNB1, KIF18B, CKS2, TIMELESS, CDK1, BIRC5, KNTC1, MCM5, NEK2, KIF2C	3.57E-12
GO:0000082~G1/S transition of mitotic cell cycle	12	5.61E-11	DHFR, RRM2, MCM7, CDKN2A, CDK1, MCM3, MCM4, CDC7, MCM5, MCM6, TYMS, MCM2	1.68E-08
GO:0006270~DNA replication initiation	8	1.18E-09	MCM7, MCM3, MCM4, CDC7, MCM5, TOPBP1, MCM6, MCM2	2.65E-07
GO:0007067~mitotic nuclear division	13	7.29E-08	NCAPG2, AURKA, CDC20, ASPM, TPX2, CENPF, TIMELESS, CDK1, BIRC5, KNTC1, NEK2, KIF2C, CENPN	1.31E-05
GO:0006268~DNA unwinding involved in DNA replication	5	3.42E-07	TOP2A, MCM7, MCM4, MCM6, MCM2	4.72E-05
GO:0006281~DNA repair	12	3.67E-07	RFC5, RAD51AP1, FANCI, POLQ, FEN1, CHAF1A, CDK1, RAD54L, BRCA1, TOPBP1, FOXM1, FANCG	4.72E-05
GO:0000086~G2/M transition of mitotic cell cycle	9	3.04E-06	TPX2, CCNB1, MELK, CDK1, BIRC5, NEK2, HMMR, FOXM1, AURKA	3.04E-04
GO:0007059~chromosome segregation	7	5.14E-06	TOP2A, CENPF, SPAG5, HJURP, CENPN, NEK2, BRCA1	4.21E-04
GO:0008283~cell proliferation	12	2.58E-05	TPX2, AR, CENPF, DACH1, MELK, MCM7, CDK1, CKS2, EMP1, KIF2C, TYMS, DLGAP5	0.001938
GO:0007051~spindle organization	4	1.40E-04	ASPM, SPAG5, TTK, AURKA	0.009699
GO:0048146~positive regulation of fibroblast proliferation	5	4.14E-04	CCNB1, PDGFD, ESR1, EREG, AQP1	0.021432
GO:0006974~cellular response to DNA damage stimulus	8	4.15E-04	TOP2A, POLQ, MCM7, TIMELESS, BRCA1, TOPBP1, DTL, FANCG	0.021432
GO:0051439~regulation of ubiquitin-protein ligase activity involved in mitotic cell cycle	4	4.29E-04	CDC20, CCNB1, UBE2C, CDK1	0.021432
GO:0000083~regulation of transcription involved in G1/S transition of mitotic cell cycle	4	4.29E-04	DHFR, RRM2, CDK1, TYMS	0.021432
GO:0070301~cellular response to hydrogen peroxide	5	5.09E-04	PDGFD, CDK1, ECT2, EZH2, AQP1	0.024028
GO:0007049~cell cycle	8	5.34E-04	CDC20, CHAF1A, GMNN, HJURP, BRCA1, FOXM1, AURKA, MCM2	0.024028

GO:0045840~positive regulation of mitotic nuclear division	4	6.20E-04	EDN3, NUSAP1, EREG, AURKA	0.026591
GO:1901796~regulation of signal transduction by p53 class mediator	6	0.001283	RFC5, TPX2, RFC4, BRCA1, TOPBP1, AURKA	0.05019
GO:0000724~double-strand break repair via homologous recombination	5	0.001363	RAD51AP1, POLQ, FEN1, RAD54L, BRCA1	0.051125

### Molecular Function

GO:0005524~ATP binding	30	3.80E-08	TOP2A, MCM7, GMPS, KIF14, TTK, ATP2C1, SMC4, AURKA, RAD54L, NEK2, RFC5, POLQ, RFC4, UBE2C, ATAD2, CDC7, ABCA8, TPX2, KIF18B, MELK, KIF4A, MCM3, CDK1, MCM4, MCM5, KIF2C, KIF20A, MCM6, ATP13A3, MCM2	9.69E-06
GO:0005515~protein binding	83	2.65E-07	TOP2A, SPON1, FEN1, MCM7, HSPB8, NCAPG2, GMNN, HJURP, KIF14, BRCA1, FOXM1, SMC4, AQP1, CDC20, CHAF1A, DACH1, NUSAP1, KNTC1, NEK2, WHSC1, TOPBP1, GTSE1, DLGAP5, RFC5, WDHD1, RFC4, KRT4, IGFBP5, KRT2, KRT1, EMP1, EREG, TGFB3, AR, MELK, CKS2, MCM3, TIMELESS, MAL, BIRC5, MCM4, MCM5, KIF2C, KIF20A, MCM6, DTL, MCM2, NCAPG, TTK, ALOX12, HMMR, AURKA, RAD51AP1, SYNGR1, CCNB1, RAD54L, APOD, SLIT2, ECT2, FANCI, GINS2, POLQ, RRM2, JUP, SPAG5, CDKN2A, UBE2C, CDC7, SORBS1, ESR1, SHCBP1, FANCG, HOPX, ZWINT, TPX2, CENPF, KIF18B, KRT17, CENPI, PRC1, KIF4A, CDK1, EZH2	3.20E-05
GO:0003678~DNA helicase activity	6	3.77E-07	MCM7, MCM3, MCM4, MCM5, MCM6, MCM2	3.20E-05
GO:0003682~chromatin binding	12	4.13E-05	TOP2A, POLQ, AR, CENPF, CHAF1A, ATAD2, CDK1, CKS2, MCM5, WHSC1, ESR1, EZH2	0.002632
GO:0003677~DNA binding	25	1.20E-04	TOP2A, FEN1, MCM7, HJURP, BRCA1, FOXM1, DACH1, NUSAP1, RAD54L, TOPBP1, RFC5, FANCI, WDHD1, POLQ, RFC4, CDKN2A, ESR1, HOPX, AR, KIF4A, MCM3, MCM4, MCM6, MCM2, EZH2	0.006144
GO:0019901~protein kinase binding	10	6.90E-04	TPX2, CCNB1, JUP, CDKN2A, PRC1, KIF14, CKS2, KIF20A, FOXM1, AURKA	0.029308
GO:0019899~enzyme binding	9	0.001342	RFC5, TOP2A, CDC20, AR, RFC4, BIRC5, BRCA1, ESR1, MCM2	0.048903
GO:0003777~microtubule motor activity	5	0.001725	KIF18B, KIF4A, KIF14, KIF2C, KIF20A	0.050003
GO:0043142~single-stranded DNA-dependent ATPase activity	3	0.001765	RFC5, POLQ, RFC4	0.050003
GO:0008017~microtubule binding	7	0.002198	KIF18B, PRC1, KIF4A, NUSAP1, KIF14, BIRC5, KIF20A	0.056039
GO:0008574~ATP-dependent microtubule motor activity, plus-end-directed	3	0.00518	KIF18B, KIF4A, KIF14	0.120084
GO:0016887~ATPase activity	6	0.006431	ATAD2, KIF14, KIF2C, KIF20A, ATP13A3, ABCA8	0.136663
GO:0042803~protein homodimerization activity	12	0.007021	TOP2A, GYS2, CENPF, UPK1A, JUP, HPGD, TIMELESS, BIRC5, TTK, SLIT2, TYMS, ECT2	0.137719

GO:0003684~damaged binding	DNA	4	0.007656	POLQ, FEN1, BRCA1, FANCG	0.139456
GO:0004003~ATP-dependent helicase activity	DNA	3	0.017752	MCM7, MCM4, MCM6	0.301781
GO:0003697~single-stranded binding	DNA	4	0.021808	RAD51AP1, MCM7, MCM4, MCM6	0.347565
GO:0035173~histone kinase activity		2	0.025349	CCNB1, CDK1	0.380229
GO:0015631~tubulin binding		3	0.02957	KIF14, BIRC5, BRCA1	0.41891
GO:0086083~cell adhesive protein binding involved in bundle of His cell-Purkinje myocyte communication		2	0.037783	JUP, DSG2	0.507089
GO:0042393~histone binding		4	0.043499	ATAD2, HJURP, CKS2, MCM2	0.533573

### Cellular Component

GO:0005654~nucleoplasm	56	4.91E-17	TOP2A, FEN1, MCM7, HSPB8, NCAPG2, GMNN, HJURP, BRCA1, FOXM1, SMC4, CDC20, WHSC1, TOPBP1, GTSE1, RFC5, WDHD1, RFC4, PEG3, AR, MCM3, TIMELESS, BIRC5, MCM4, MCM5, KIF20A, MCM6, DTL, MCM2, HPGD, TYMS, AURKA, RAD51AP1, CCNB1, RAD54L, FANCI, GINS1, GINS2, POLQ, RRM2, SPAG5, CDKN2A, UBE2C, ATAD2, CDC7, SORBS1, ESR1, FANCG, DHFR, TPX2, CENPF, CENPI, PRC1, KIF4A, CDK1, CENPN, EZH2	7.55E-15
GO:0030496~midbody	13	2.54E-11	SPAG5, KIF14, SHCBP1, AURKA, ASPM, CENPF, PRC1, KIF4A, CDK1, BIRC5, NEK2, KIF20A, ECT2	1.95E-09
GO:0042555~MCM complex	6	1.04E-09	MCM7, MCM3, MCM4, MCM5, MCM6, MCM2	5.32E-08
GO:0005634~nucleus	65	2.18E-09	TOP2A, FEN1, MCM7, HSPB8, NCAPG2, GMNN, FAM107A, HJURP, KIF14, BRCA1, FOXM1, SMC4, AQP1, CDC20, CHAF1A, DACH1, NUSAP1, KNTC1, NEK2, WHSC1, TOPBP1, DLGAP5, KRT4, PEG3, KRT2, KRT1, ASPM, AR, MELK, MCM3, TIMELESS, BIRC5, MCM4, MCM5, KIF2C, MCM6, DTL, MCM2, NCAPG, TYMS, AURKA, RAD51AP1, CCNB1, NDN, RAD54L, ECT2, GINS1, GINS2, RRM2, JUP, SPAG5, CDKN2A, ATAD2, CDC7, SORBS1, ESR1, HOPX, ZWINT, TPX2, CENPF, KIF18B, CENPI, PRC1, CDK1, EZH2	8.38E-08
GO:0005819~spindle	10	6.21E-08	CDC20, TPX2, CENPF, PRC1, NUSAP1, BIRC5, TTK, KIF20A, SHCBP1, AURKA	1.91E-06
GO:0005876~spindle microtubule	7	2.90E-07	SPAG5, PRC1, KIF4A, NUSAP1, CDK1, BIRC5, AURKA	6.74E-06
GO:0005737~cytoplasm	59	3.07E-07	TOP2A, MCM7, HSPB8, GMNN, HJURP, BRCA1, FOXM1, SMC4, AQP1, GYS2, CDC20, ENDOU, DACH1, NUSAP1, KNTC1, NEK2, WHSC1, TOPBP1, DLGAP5, WDHD1, KRT2, TGFB3, ASPM, AR, BIRC5, DTL, MCM2, HPGD, GMPS, NCAPG, TTK, ALOX12, TYMS, CCNB1, SLIT2, ECT2, FANCI, GINS1, RRM2, JUP, SPAG5, CDKN2A, UBE2C, CDC7, SORBS1, ESR1, SHCBP1, FANCG, HOPX, ZWINT, CRNN, CENPF, KIF18B, KRT17, CENPI, PRC1, KIF4A, CDK1, EZH2	6.74E-06

GO:0000922~spindle pole	9	3.84E-07	CDC20, TPX2, CENPF, CCNB1, SPAG5, PRC1, KNTC1, NEK2, TOPBP1	7.40E-06
GO:0000777~condensed chromosome kinetochore	8	1.13E-06	SPAG5, HJURP, BIRC5, KNTC1, KIF2C, CENPN, NEK2, ZWINT	1.94E-05
GO:0005694~chromosome	8	4.03E-06	POLQ, KIF4A, NUSAP1, BRCA1, TOPBP1, WHSC1, SMC4, DTL	6.21E-05
GO:0000776~kinetochore	7	1.11E-05	CENPF, SPAG5, CENPI, TTK, KIF2C, NEK2, ZWINT	1.55E-04
GO:0000784~nuclear chromosome, telomeric region	8	1.65E-05	FEN1, MCM7, CDK1, MCM3, MCM4, MCM5, MCM6, MCM2	2.12E-04
GO:0005813~centrosome	12	6.86E-05	CDC20, CENPF, CCNB1, CDK1, MCM3, NDN, NCAPG, NEK2, TOPBP1, SORBS1, DTL, AURKA	8.12E-04
GO:0005874~microtubule	10	1.38E-04	TPX2, KIF18B, KIF4A, NUSAP1, KIF14, BIRC5, KIF2C, NEK2, KIF20A, AURKA	0.001519
GO:0015630~microtubule cytoskeleton	7	2.11E-04	TPX2, PRC1, TIMELESS, KIF2C, CDC7, AURKA, MCM2	0.002171
GO:0005829~cytosol	37	3.13E-04	MCM7, HPGD, GMNN, GMPS, KIF14, NCAPG, ALOX12, HMMR, TYMS, SMC4, AURKA, CDC20, GYS2, CCNB1, NDN, KNTC1, NEK2, ECT2, GTSE1, RRM2, JUP, CDKN2A, UBE2C, SORBS1, ZWINT, DHFR, AR, TPX2, CENPF, PRC1, CENPI, KIF4A, SMS, CDK1, BIRC5, CENPN, KIF2C	0.002941
GO:0005871~kinesin complex	5	3.25E-04	KIF18B, KIF4A, KIF14, KIF2C, KIF20A	0.002941
GO:0045120~pronucleus	3	7.84E-04	CENPF, EZH2, AURKA	0.006356
GO:0016020~membrane	26	0.001825	FEN1, MCM7, NCAPG2, KIF14, NCAPG, TTK, ALOX12, HMMR, ATP2C1, CCNB1, SLIT2, GTSE1, FANCI, KRT2, KRT1, EMP1, ESR1, CRNN, MELK, KIF4A, MCM3, CDK1, MCM4, MCM5, KIF2C, ATP13A3	0.014051
GO:0072686~mitotic spindle	4	0.002084	SPAG5, CDK1, ECT2, AURKA	0.015286

#### KEGG Pathway

Term	Count	PValue	cDEGs
DNA replication(hsa03030)	9	7.97E-11	RFC5, FEN1, RFC4, MCM7, MCM3, MCM4, MCM5, MCM6, MCM2
Cell cycle (hsa04110)	12	5.37E-10	CDC20, CCNB1, MCM7, CDKN2A, CDK1, MCM3, MCM4, TTK, CDC7, MCM5, MCM6, MCM2
p53 signaling pathway (hsa04115)	5	0.001159	CCNB1, RRM2, CDKN2A, CDK1, GTSE1
Oocyte meiosis (hsa04114)	5	0.00724	CDC20, AR, CCNB1, CDK1, AURKA
Fanconi anemia pathway (hsa03460:)	3	0.04857	FANCI, BRCA1, FANCG

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