

Fig.1: All genes are highly enriched in our list of DEGs and involved in Kegg pathway for kidney cancer except the marked star genes.

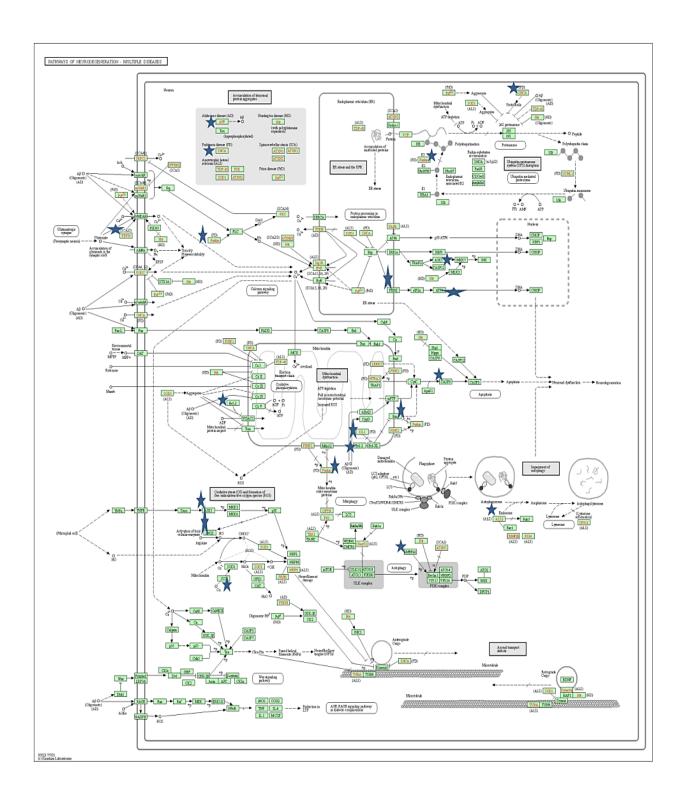


Fig.2: All genes are highly enriched in our list of DEGs and involved in Kegg pathway for lung cancer except the marked star genes.

## The most significant list of Go terms which highly enriched with our list of kidney DEGs:



Fig.3: Most significant list of BP in kidney cancer.

265 chart records <u>E Down</u>					nload File	
Sublist	<u>Category</u>	<mark>† <u>Term</u></mark>	<b>‡</b> RT Genes	<u>Count</u>	♦ <u>P-Value</u>	♦ <u>Benjamini</u> ♦
	GOTERM_CC_DIRECT	cytosol	RT	3788 31.7	7.1E-129	1.2E-125
	GOTERM_CC_DIRECT	membrane	<u>rt</u>	1876 15.7	8.2E-91	6.8E-88
	GOTERM_CC_DIRECT	<u>cytoplasm</u>	<u>rt</u>	3679 30.8	3.3E-79	1.8E-76
	GOTERM_CC_DIRECT	nudeoplasm	<u>rt</u>	2682 22.4	1.9E-72	8.0E-70
	GOTERM_CC_DIRECT	extracellular exosome	<u>rt</u>	1498 12.5	5.5E-35	1.8E-32
	GOTERM_CC_DIRECT	nucleus	<u>rt</u>	3664 30.7	3.3E-32	9.3E-30
	GOTERM_CC_DIRECT	mitochondrion	<u>rt</u>	1003 8.4	5.1E-31	1.2E-28
	GOTERM_CC_DIRECT	focal adhesion	<u>rt</u> 🖥	344 2.9	5.1E-29	1.1E-26
	GOTERM_CC_DIRECT	<u>Golgi apparatus</u>	<u>rt</u>	789 6.6	6.0E-26	1.1E-23
	GOTERM_CC_DIRECT	intracellular membrane-bounded organelle	<u>rt</u> \overline	700 5.9	1.2E-25	2.1E-23
	GOTERM_CC_DIRECT	endoplasmic reticulum	<u>rt</u>	800 6.7	1.6E-25	2.5E-23
	GOTERM_CC_DIRECT	endoplasmic reticulum membrane	<u>rt</u> \overline	732 6.1	3.7E-22	5.1E-20
	GOTERM_CC_DIRECT	cell surface	<u>rt</u>	468 3.9	2.5E-21	3.2E-19
	GOTERM_CC_DIRECT	perinuclear region of cytoplasm	<u>rt</u> 🖥	543 4.5	7.8E-20	9.3E-18
	GOTERM_CC_DIRECT	cytoplasmic vesicle	<u>rt</u>	250 2.1	1.0E-15	1.1E-13
	GOTERM_CC_DIRECT	macromolecular complex	<u>rt</u> 🖥	489 4.1	8.5E-15	8.9E-13
	GOTERM_CC_DIRECT	cytosolic ribosome	<u>rt</u>	74 0.6	1.0E-14	1.0E-12
	GOTERM_CC_DIRECT	mitochondrial matrix	<u>rt</u> 🖥	290 2.4	1.2E-14	1.1E-12
	GOTERM_CC_DIRECT	endosome	<u>rt</u>	240 2.0	9.5E-14	8.4E-12
	GOTERM_CC_DIRECT	centrosome	<u>rt</u> 🖥	387 3.2	1.4E-13	1.2E-11
	GOTERM_CC_DIRECT	<u>Golgi membrane</u>	<u>rt</u>	450 3.8	1.6E-13	1.3E-11
	GOTERM_CC_DIRECT	neuronal cell body	<u>rt</u> 🖥	297 2.5	3.0E-13	2.3E-11
	GOTERM_CC_DIRECT	receptor complex	<u>rt</u>	172 1.4	4.1E-13	3.0E-11
	GOTERM_CC_DIRECT	<u>basolateral plasma membrane</u>	<u>rt</u> 🖥	186 1.6	4.8E-13	3.3E-11
	GOTERM_CC_DIRECT	<u>plasma membrane</u>	<u>RT</u>	3027 25.3	8.1E-13	5.4E-11
	GOTERM_CC_DIRECT	actin cytoskeleton	<u>rt</u> 🖥	197 1.6	4.7E-12	3.0E-10
	GOTERM_CC_DIRECT	<u>qlutamatergic synapse</u>	<u>rt</u>	270 2.3	1.7E-11	1.1E-9
	GOTERM_CC_DIRECT	membrane raft	<u>rt</u> 🖥	190 1.6	4.4E-11	2.6E-9
	GOTERM_CC_DIRECT	<u>postsynaptic density</u>	<u>rt</u>	200 1.7	6.6E-11	3.8E-9
	GOTERM_CC_DIRECT	integral component of plasma membrane	<u>rt</u> $\equiv$	952 8.0	2.9E-10	1.6E-8
	GOTERM_CC_DIRECT	mitochondrial inner membrane	<u>rt</u>	323 2.7	3.4E-10	1.8E-8

Fig.4: Most significant list of CC in kidney cancer.

221 chart records							4	Downl	oad File
Sublist	t <u>Category</u>	‡ <u>Term</u>		<b>‡</b> RT	Genes	Count	<u>%</u> \$	P-Value	<u>Benjaminf</u>
	GOTERM_MF_DIR	ECT <u>protein binding</u>		<u>rt</u>		8307	69.5	4.4E- 175	1.7E-171
	GOTERM_MF_DIR	ECT <u>identical protein binding</u>		<u>rt</u>		1229	10.3	1.3E-30	2.5E-27
	GOTERM_MF_DIR	ECT <u>ATP binding</u>		<u>rt</u>		1053	8.8	1.2E-14	1.5E-11
	GOTERM_MF_DIR	ECT RNA binding		<u>rt</u>		992	8.3	4.3E-12	4.1E-9
	GOTERM_MF_DIR	ECT macromolecular complex binding		<u>rt</u>		306	2.6	2.5E-10	1.9E-7
	GOTERM_MF_DIR	ECT metal ion binding		<u>rt</u>		1700	14.2	1.7E-9	1.1E-6
	GOTERM_MF_DIR	ECT <u>protein homodimerization activity</u>		<u>RT</u>		496	4.2	3.6E-9	2.0E-6
	GOTERM_MF_DIR	ECT SH3 domain binding		<u>RT</u>	i	109	0.9	7.7E-9	3.6E-6
	GOTERM_MF_DIR	ECT <u>protein tyrosine kinase activity</u>		<u>RT</u>		95	0.8	3.0E-8	1.2E-5
	GOTERM_MF_DIR	ECT <u>ubiquitin protein ligase binding</u>		<u>rt</u>	i	226	1.9	4.6E-8	1.7E-5
	GOTERM_MF_DIR	ECT GTPase activator activity		<u>rt</u>		212	1.8	7.5E-8	2.6E-5
	GOTERM_MF_DIR	ECT actin filament binding		<u>rt</u>	i	171	1.4	1.3E-7	4.2E-5
	GOTERM_MF_DIR	ECT <u>protein kinase binding</u>		<u>rt</u>		357	3.0	2.4E-7	6.9E-5
	GOTERM_MF_DIR	ECT small GTPase binding		<u>rt</u>	i	210	1.8	2.9E-7	7.5E-5
	GOTERM_MF_DIR	ECT guanyl-nucleotide exchange factor	<u>activity</u>	<u>RT</u>	I	176	1.5	3.0E-7	7.5E-5
	GOTERM_MF_DIR	ECT <u>actin binding</u>		<u>RT</u>	i	245	2.1	4.2E-7	9.9E-5
	GOTERM_MF_DIR	ECT <u>oxidoreductase activity</u>		<u>RT</u>	I	180	1.5	4.9E-7	1.1E-4
	GOTERM_MF_DIR	ECT <u>signaling receptor activity</u>		<u>rt</u>	i	173	1.4	6.2E-7	1.3E-4
	GOTERM_MF_DIR	ECT <u>transmembrane receptor protein t</u>	<u>yrosine kinase activity</u>	<u>rt</u>	l	94	0.8	1.1E-6	2.1E-4
	GOTERM_MF_DIR	ECT <u>cadherin binding</u>		<u>rt</u>	1	227	1.9	2.4E-6	4.5E-4
	GOTERM_MF_DIR	ECT microtubule binding		<u>rt</u>		194	1.6	2.8E-6	5.0E-4
	GOTERM_MF_DIR	ECT <u>receptor binding</u>		<u>rt</u>	i	276	2.3	1.0E-5	1.8E-3
	GOTERM_MF_DIR	ECT <u>integrin binding</u>		<u>rt</u>		122	1.0	1.3E-5	2.1E-3
	GOTERM_MF_DIR	ECT protease binding		<u>rt</u>	i	86	0.7	2.3E-5	3.7E-3
	GOTERM_MF_DIR	ECT <u>kinase binding</u>		<u>rt</u>		81	0.7	2.8E-5	4.0E-3
	GOTERM_MF_DIR	ECT <u>kinase activity</u>		<u>rt</u>	i	164	1.4	2.8E-5	4.0E-3
	GOTERM_MF_DIR	ECT <u>protein serine/threonine kinase ac</u>	<u>tivity</u>	<u>rt</u>		271	2,3	3.2E-5	4.5E-3
	GOTERM_MF_DIR	ECT poly(U) RNA binding		<u>rt</u>	i	25	0.2	3.5E-5	4.7E-3
	GOTERM_MF_DIR	ECT <u>protein binding, bridging</u>		<u>rt</u>		82	0.7	3.9E-5	5.1E-3
	GOTERM_MF_DIR	ECT protein domain specific binding		<u>rt</u>	i	186	1.6	9.0E-5	1.1E-2
	COTEDN NE DID	ret milit e militar birdin		nt		100	4.5	4 05 4	1000

Fig.5: Most significant list of MF in kidney cancer.

## The most significant list of Go terms which highly enriched with our list of lung DEGs:



Fig.6: Most significant list of BP in lung cancer.

278 chart records						2 Download File			
Sublist	<u>Category</u>	<b>♦</b> <u>Term</u>	<b>‡</b> RT Genes	Count:	<u>%</u>	P-Value	<b>♦</b> <u>Benjamini</u> <b>♦</b>		
	GOTERM_CC_DIRECT	cytosol	RT	3794	31.5	3.5E-121	5.8E-118		
	GOTERM_CC_DIRECT	<u>cytoplasm</u>	RT	3711	30.8	8.1E-80	6.8E-77		
	GOTERM_CC_DIRECT	nucleoplasm	RT	2721	22.6	8.6E-78	4.8E-75		
	GOTERM_CC_DIRECT	membrane	<u>rt</u>	1843	15.3	1.3E-73	5.4E-71		
	GOTERM_CC_DIRECT	nucleus	<u>rt</u>	3799	31.5	7.9E-51	2.7E-48		
	GOTERM_CC_DIRECT	<u>extracellular exosome</u>	<u>rt</u>	1465	12.1	7.2E-25	2.0E-22		
	GOTERM_CC_DIRECT	endoplasmic reticulum membrane	<u>rt</u>	746	6.2	1.3E-24	3.3E-22		
	GOTERM_CC_DIRECT	mitochondrion	<u>rt</u>	976	8.1	5.0E-22	1.1E-19		
	GOTERM_CC_DIRECT	<u>Golgi apparatus</u>	<u>rt</u>	776	6.4	9.0E-21	1.7E-18		
	GOTERM_CC_DIRECT	endoplasmic reticulum	<u>rt</u> =	784	6.5	1.2E-19	2.0E-17		
	GOTERM_CC_DIRECT	<u>focal adhesion</u>	<u>rt</u>	324	2.7	1.2E-18	1.9E-16		
	GOTERM_CC_DIRECT	intracellular membrane-bounded organelle	<u>rt</u> =	680	5.6	1.6E-18	2.3E-16		
	GOTERM_CC_DIRECT	perinuclear region of cytoplasm	<u>rt</u>	532	4.4	2.9E-15	3.8E-13		
	GOTERM_CC_DIRECT	centrosome	<u>rt</u> =	393	3.3	1.5E-14	1.8E-12		
	GOTERM_CC_DIRECT	microtubule	<u>rt</u>	249	2.1	2.4E-14	2.7E-12		
	GOTERM_CC_DIRECT	cell surface	<u>rt</u> =	445	3.7	5.9E-13	6.2E-11		
	GOTERM_CC_DIRECT	macromolecular complex	<u>rt</u>	485	4.0	8.6E-13	8.5E-11		
	GOTERM_CC_DIRECT	ficolin-1-rich granule lumen	<u>RT</u>	107	0.9	1.8E-12	1.7E-10		
	GOTERM_CC_DIRECT	<u>cytoplasmic vesicle</u>	<u>rt</u>	243	2.0	2.8E-12	2.5E-10		
	GOTERM_CC_DIRECT	<u>Golgi membrane</u>	<u>rt</u> =	447	3.7	7.4E-12	6.2E-10		
	GOTERM_CC_DIRECT	nuclear membrane	<u>rt</u>	185	1.5	3.1E-11	2.5E-9		
	GOTERM_CC_DIRECT	cell-cell junction	<u>rt</u>	152	1.3	3.5E-11	2.7E-9		
	GOTERM_CC_DIRECT	nuclear envelope	<u>RT</u>	153	1.3	5.1E-11	3.7E-9		
	GOTERM_CC_DIRECT	actin cytoskeleton	<u>rt</u>	195	1.6	9.5E-11	6.7E-9		
	GOTERM_CC_DIRECT	<u>ysosome</u>	<u>rt</u>	226	1.9	5.9E-10	4.0E-8		
	GOTERM_CC_DIRECT	neuronal cell body	<u>rt</u>	288	2.4	8.7E-10	5.6E-8		
	GOTERM_CC_DIRECT	<u>postsynaptic density</u>	<u>rt</u>	198	1.6	1.1E-9	6.9E-8		
	GOTERM_CC_DIRECT	microtubule organizing center	<u>rt</u> [	127	1.1	1.2E-9	7.5E-8		
]	GOTERM_CC_DIRECT	<u>glutamatergic synapse</u>	<u>rt</u>	265	2.2	2.3E-9	1.3E-7		
	GOTERM_CC_DIRECT	endosome membrane	<u>rt</u>	188	1.6	2.3E-9	1.3E-7		
	GOTERM_CC_DIRECT	mitochondrial matrix	<u>rt</u>	275	2.3	3.7E-9	2.0E-7		

Fig.7: Most significant list of CC in lung cancer.

216 c	hart records				ď	Download File		
Sublist	Category \$	<u>Term</u>	RT Genes   □ RT Genes	Coun	<u>%</u>	<u>P-Value</u>	<u>Benjaminî</u>	
	GOTERM_MF_DIRECT	protein binding	<u>rt</u>	8340	69.1	2.7E- 166	1.0E-162	
	GOTERM_MF_DIRECT	ATP binding	<u>RT</u>	1103	9.1	1.8E-24	3.3E-21	
	GOTERM_MF_DIRECT	identical protein binding	<u>rt</u>	1183	9.8	3.3E-18	4.1E-15	
	GOTERM_MF_DIRECT	RNA binding	<u>RT</u>	1013	8.4	9.5E-15	8.9E-12	
	GOTERM_MF_DIRECT	protein kinase binding	RT 🖥	376	3.1	1.5E-11	1.1E-8	
	GOTERM_MF_DIRECT	small GTPase binding	<u>rt</u>	223	1.8	3.0E-11	1.9E-8	
	GOTERM_MF_DIRECT	<u>ubiquitin</u> protein ligase binding	RT 🖥	236	2.0	5.7E-11	3.1E-8	
	GOTERM_MF_DIRECT	protein homodimerization activity	<u>rt</u>	507	4.2	6.5E-11	3.1E-8	
	GOTERM_MF_DIRECT	actin binding	RT 🖥	253	2.1	5.9E-9	2.5E-6	
	GOTERM_MF_DIRECT	metal ion binding	RT ===	1706	14.1	7.1E-9	2.7E-6	
	GOTERM_MF_DIRECT	protein serine/threonine kinase activity	RT 🖥	285	2.4	4.8E-8	1.6E-5	
	GOTERM_MF_DIRECT	protein kinase activity	RT 🖥	275	2.3	1.1E-7	3.6E-5	
	GOTERM_MF_DIRECT	macromolecular complex binding	<u>RT</u>	297	2.5	2.0E-7	5.8E-5	
	GOTERM_MF_DIRECT	guanyl-nucleotide exchange factor activity	<u>rt</u>	176	1.5	6.1E-7	1.6E-4	
)	GOTERM_MF_DIRECT	ATPase activity	<u>rt</u>	253	2.1	9.2E-7	2.3E-4	
	GOTERM_MF_DIRECT	SH3 domain binding	<u>rt</u>	105	0.9	1.0E-6	2.4E-4	
	GOTERM_MF_DIRECT	actin filament binding	<u>rt</u>	168	1.4	2.5E-6	5.4E-4	
	GOTERM_MF_DIRECT	protein domain specific binding	RT 🖥	193	1.6	3.0E-6	6.3E-4	
)	GOTERM_MF_DIRECT	protein C-terminus binding	<u>rt</u>	156	1.3	3.8E-6	7.3E-4	
	GOTERM_MF_DIRECT	kinase activity	<u>rt</u>	168	1.4	3.9E-6	7.3E-4	
)	GOTERM_MF_DIRECT	double-stranded RNA binding	<u>rt</u>	64	0.5	4.3E-6	7.6E-4	
	GOTERM_MF_DIRECT	RNA polymerase II sequence-specific DNA binding transcription factor binding	<u>rt</u>	142	1.2	5.6E-6	9.6E-4	
	GOTERM_MF_DIRECT	transcription factor binding	<u>rt</u>	156	1.3	6.0E-6	9.9E-4	
	GOTERM_MF_DIRECT	magnesium ion binding	<u>rt</u>	171	1.4	1.2E-5	1.8E-3	
	GOTERM_MF_DIRECT	microtubule binding	<u>rt</u>	192	1.6	1.8E-5	2.7E-3	
	GOTERM_MF_DIRECT	calcium ion binding	<u>rt</u> =	503	4.2	1.9E-5	2.7E-3	
	GOTERM_MF_DIRECT	cadherin binding	<u>rt</u>	224	1.9	2.6E-5	3.6E-3	
	GOTERM_MF_DIRECT	protein tyrosine kinase activity	<u>rt</u>	89	0.7	2.8E-5	3.8E-3	
]	GOTERM_MF_DIRECT	transcription regulatory region sequence-specific DNA binding	<u>rt</u>	172	1.4	4.6E-5	6.0E-3	
	GOTERM_MF_DIRECT	enzyme binding	<u>RT</u>	270	2.2	6.1E-5	7.6E-3	
	COTEDM ME DIDECT	chromatin hinding	DT 📱	310	2.6	6 7F-5	8 1F-3	

Fig.8: Most significant list of MF in lung cancer.

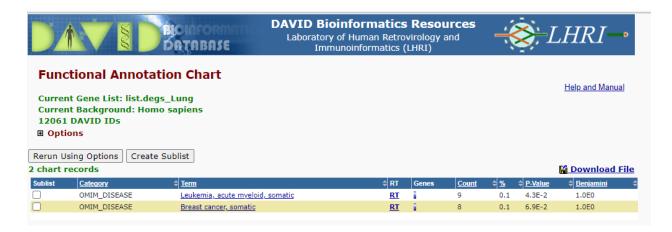


Fig.9: The related OMIM diseases of our lung DEGs.