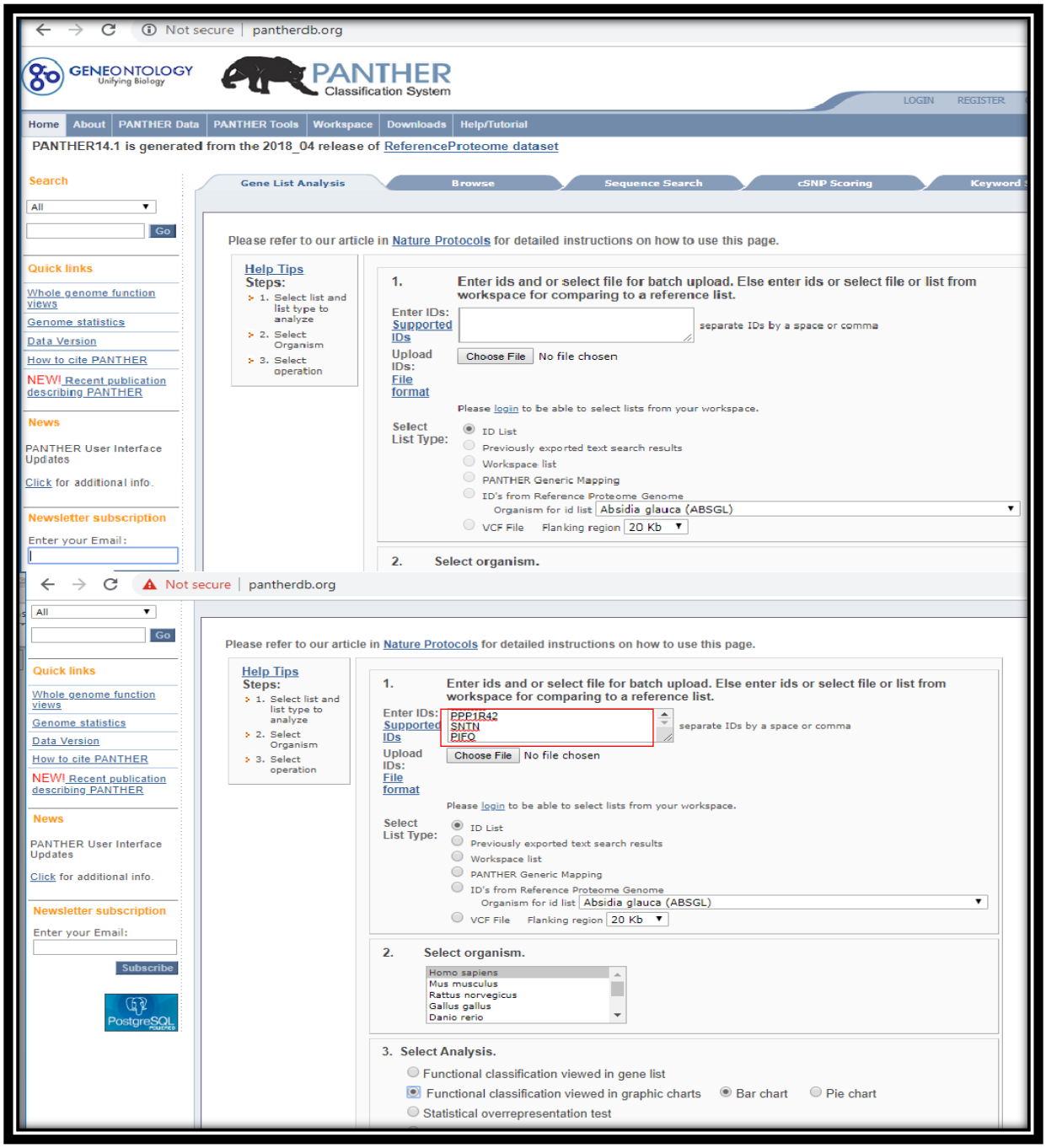
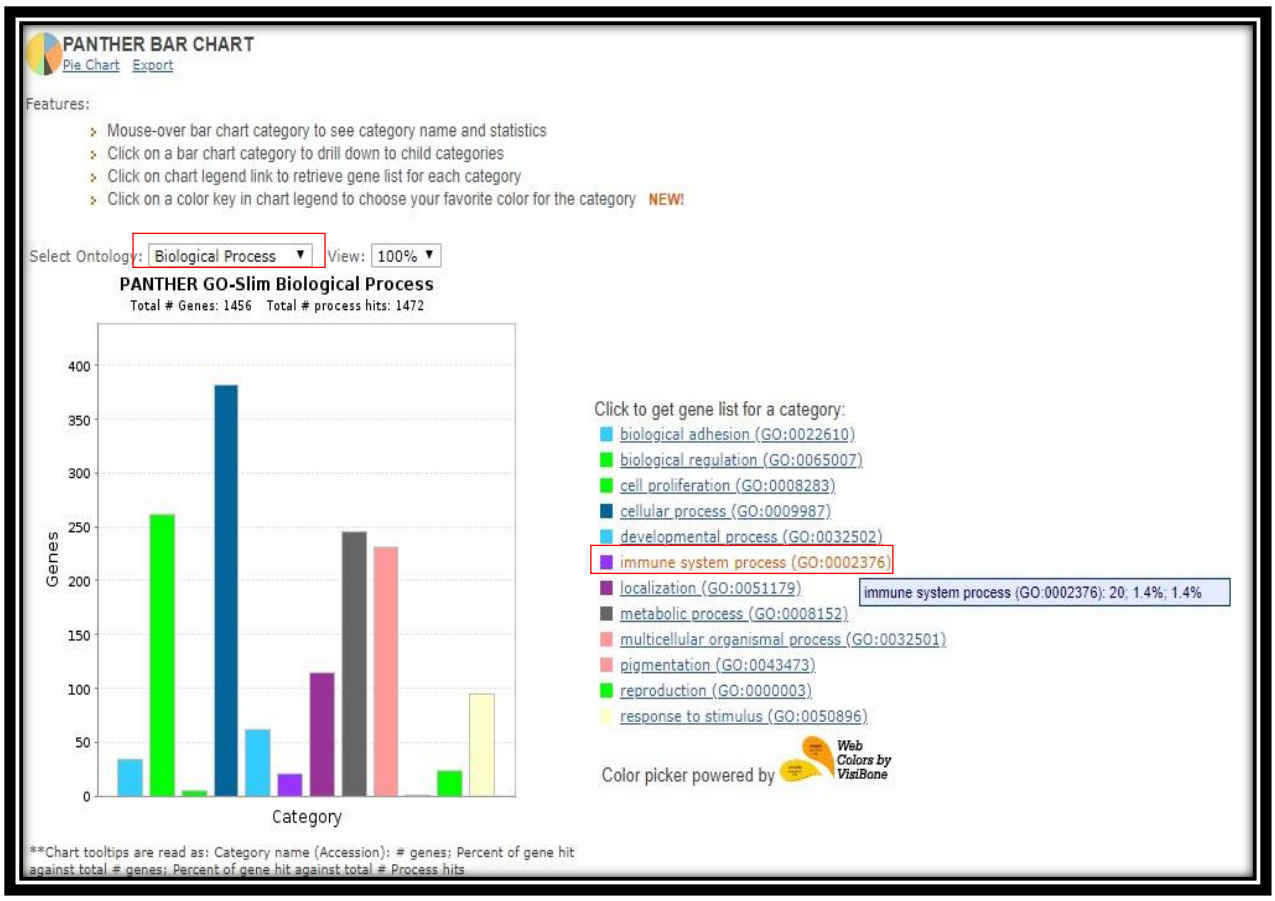
Supplementary 1. Analysis of biological processes using the Pantherdb tool.





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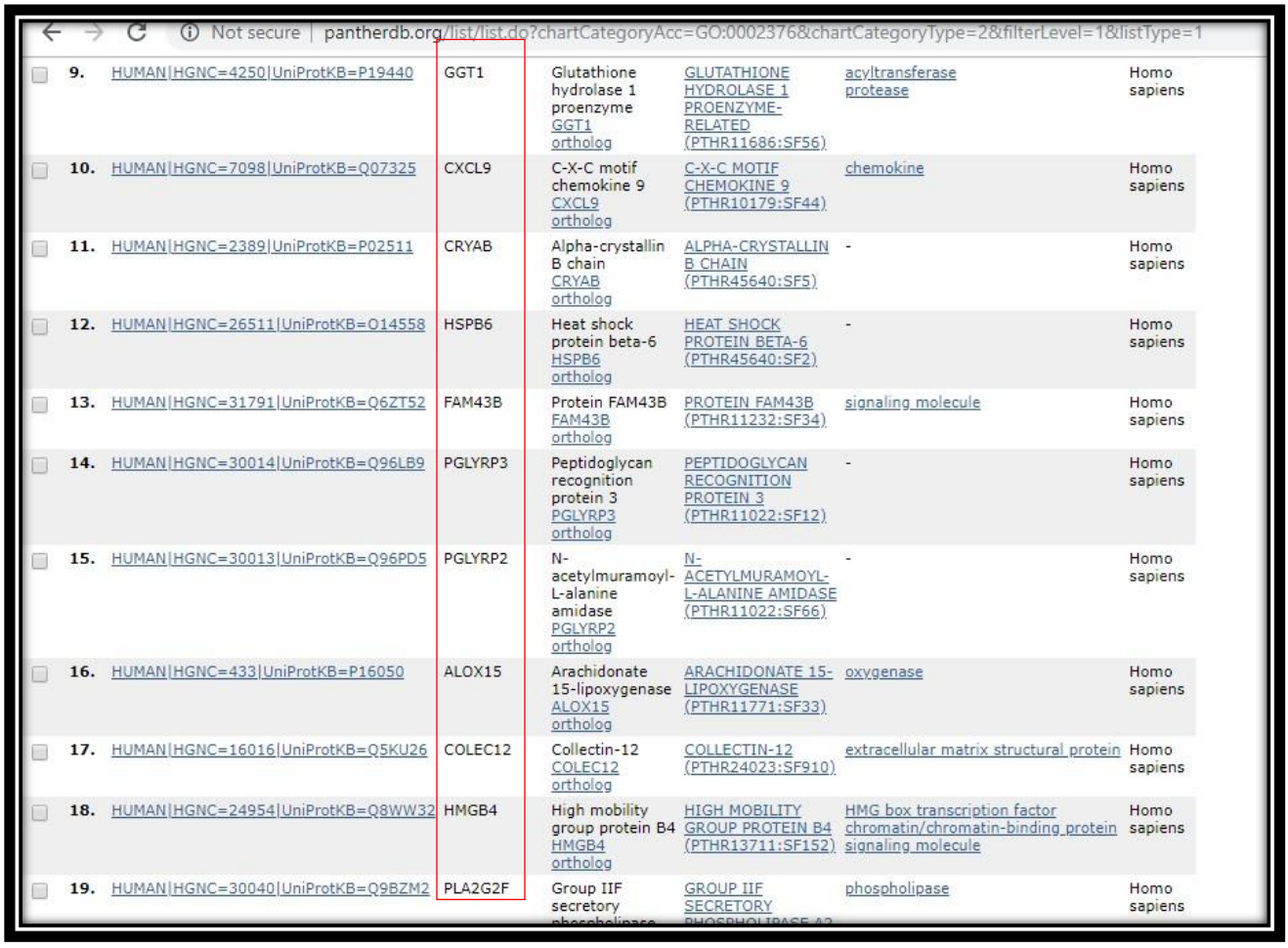
clr all		Gene ID	Mapped IDs	Gene Name Gene Symbol Ortholog	PANTHER Family/Subfamily	PANTHER Protein Class	Species
	1.	HUMAN|HGNC=26361|UniProtKB=Q14CZ8	HEPACAM	Hepatocyte cell adhesion molecule HEPACAM ortholog	HEPATOCYTE CELL ADHESION MOLECULE (PTHR12080:SF59)	cell adhesion molecule immunoglobulin receptor superfamily protein kinase signaling molecule	Homo sapiens
	2.	HUMAN|HGNC=1143|UniProtKB=Q6UXE8	BTNL3	Butyrophilin-like protein 3 BTNL3 ortholog	BUTYROPHILIN-LIKE PROTEIN 3 (PTHR24100:SF109)	protease inhibitor	Homo sapiens
	3.	HUMAN|HGNC=8601|UniProtKB=Q06141	REG3A	Regenerating islet-derived protein 3-alpha REG3A ortholog	REGENERATING ISLET-DERIVED PROTEIN 3-ALPHA (PTHR22803:SF123)	-	Homo sapiens
	4.	HUMAN|HGNC=9952|UniProtKB=P48304	REG1B	Lithostathine-1-beta REG1B ortholog	LITHOSTATHINE-1-BETA (PTHR22803:SF129)	-	Homo sapiens
	5.	HUMAN|HGNC=3010|UniProtKB=P42658	DPP6	Dipeptidyl aminopeptidase-like protein 6 DPP6 ortholog	DIPEPTIDYL AMINOPEPTIDASE-LIKE PROTEIN 6 (PTHR11731:SF20)	enzyme modulator serine protease	Homo sapiens
	6.	HUMAN|HGNC=9951|UniProtKB=P05451	REG1A	Lithostathine-1-alpha REG1A ortholog	LITHOSTATHINE-1-ALPHA (PTHR22803:SF105)	-	Homo sapiens
	7.	HUMAN|HGNC=10638|UniProtKB=O14625	CXCL11	C-X-C motif chemokine 11 CXCL11 ortholog	C-X-C MOTIF CHEMOKINE 11 (PTHR10179:SF28)	chemokine	Homo sapiens
	8.	HUMAN|HGNC=14556|UniProtKB=Q6EIG7	CLEC6A	C-type lectin domain family 6 member A CLEC6A ortholog	C-TYPE LECTIN DOMAIN FAMILY 6 MEMBER A (PTHR22802:SF249)	cell adhesion molecule immunoglobulin receptor superfamily	Homo sapiens
	9.	HUMAN|HGNC=4250|UniProtKB=P19440	GGT1	Glutathione hydrolase 1	GLUTATHIONE HYDROLASE 1	acyltransferase protease	Homo sapiens



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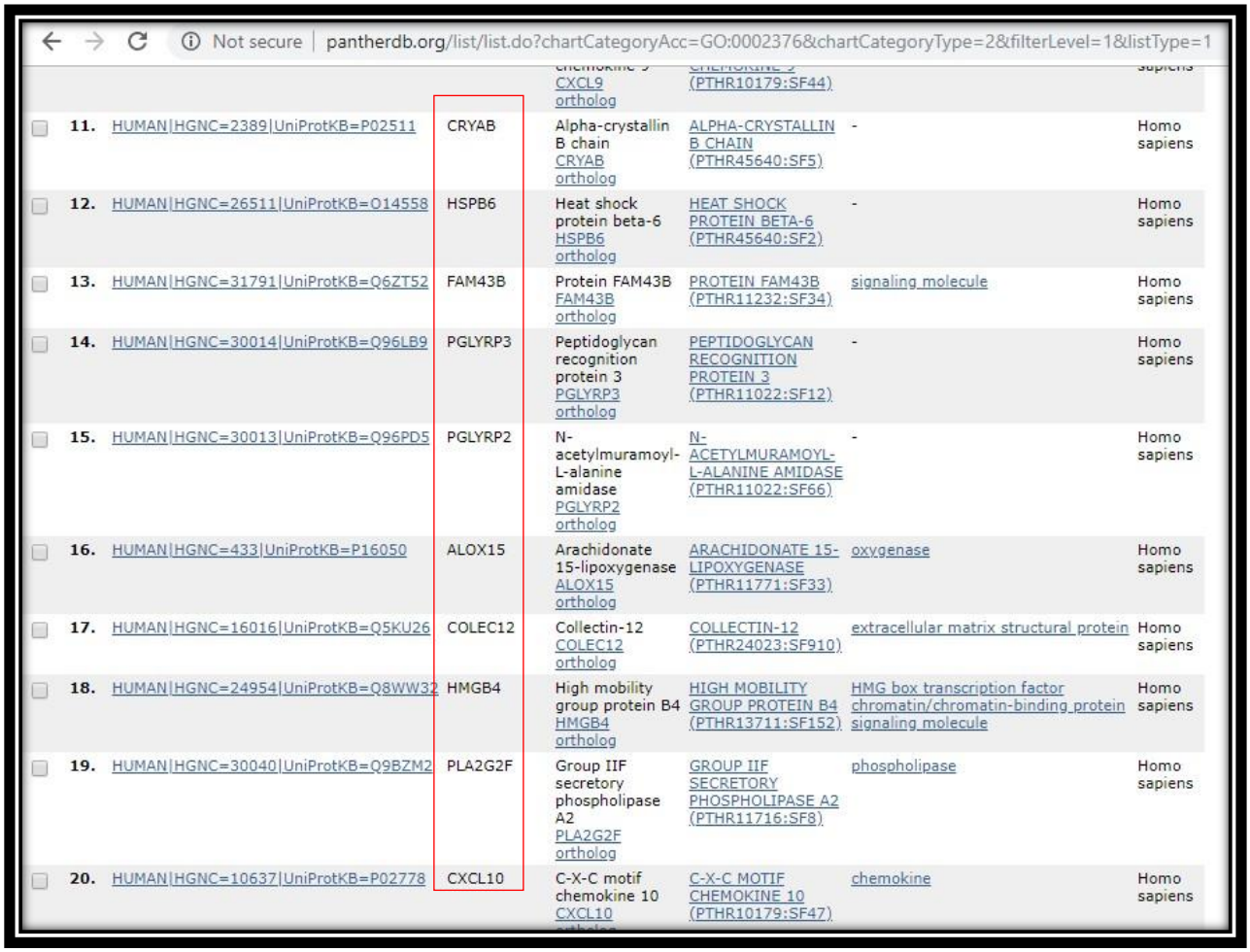
9.	HUMAN|HGNC=4250|UniProtKB=P19440	GGT1	Glutathione hydrolase 1 proenzyme GGT1 ortholog	GLUTATHIONE HYDROLASE 1 PROENZYME-RELATED (PTHR11686:SF56)	acyltransferase protease		Homo sapiens
10.	HUMAN|HGNC=7098|UniProtKB=Q07325	CXCL9	C-X-C motif chemokine 9 CXCL9 ortholog	C-X-C MOTIF CHEMOKINE 9 (PTHR10179:SF44)	chemokine		Homo sapiens
11.	HUMAN|HGNC=2389|UniProtKB=P02511	CRYAB	Alpha-crystallin B chain CRYAB ortholog	ALPHA-CRYSTALLIN B CHAIN (PTHR45640:SF5)	-		Homo sapiens
12.	HUMAN|HGNC=26511|UniProtKB=O14558	HSPB6	Heat shock protein beta-6 HSPB6 ortholog	HEAT SHOCK PROTEIN BETA-6 (PTHR45640:SF2)	-		Homo sapiens
13.	HUMAN|HGNC=31791|UniProtKB=Q6ZT52	FAM43B	Protein FAM43B FAM43B ortholog	PROTEIN FAM43B (PTHR11232:SF34)	signaling molecule		Homo sapiens
14.	HUMAN|HGNC=30014|UniProtKB=Q96LB9	PGLYRP3	Peptidoglycan recognition protein 3 PGLYRP3 ortholog	PEPTIDOGLYCAN RECOGNITION PROTEIN 3 (PTHR11022:SF12)	-		Homo sapiens
15.	HUMAN|HGNC=30013|UniProtKB=Q96PD5	PGLYRP2	N-acetylmuramoyl-L-alanine amidase PGLYRP2 ortholog	N-ACETYLMURAMOYL-L-ALANINE AMIDASE (PTHR11022:SF66)	-		Homo sapiens
16.	HUMAN|HGNC=433|UniProtKB=P16050	ALOX15	Arachidonate 15-lipoxygenase ALOX15 ortholog	ARACHIDONATE 15-LIPOXYGENASE (PTHR11771:SF33)	oxygenase		Homo sapiens
17.	HUMAN|HGNC=16016|UniProtKB=Q5KU26	COLEC12	Collectin-12 COLEC12 ortholog	COLLECTIN-12 (PTHR24023:SF910)	extracellular matrix structural protein		Homo sapiens
18.	HUMAN|HGNC=24954|UniProtKB=Q8WW32	HMGB4	High mobility group protein B4 HMGB4 ortholog	HIGH MOBILITY GROUP PROTEIN B4 (PTHR13711:SF152)	HMG box transcription factor chromatin/chromatin-binding protein signaling molecule		Homo sapiens
19.	HUMAN|HGNC=30040|UniProtKB=Q9BZM2	PLA2G2F	Group IIF secretory phospholipase	GROUP IIF SECRETORY PHOSPHOLIPASE A2	phospholipase		Homo sapiens

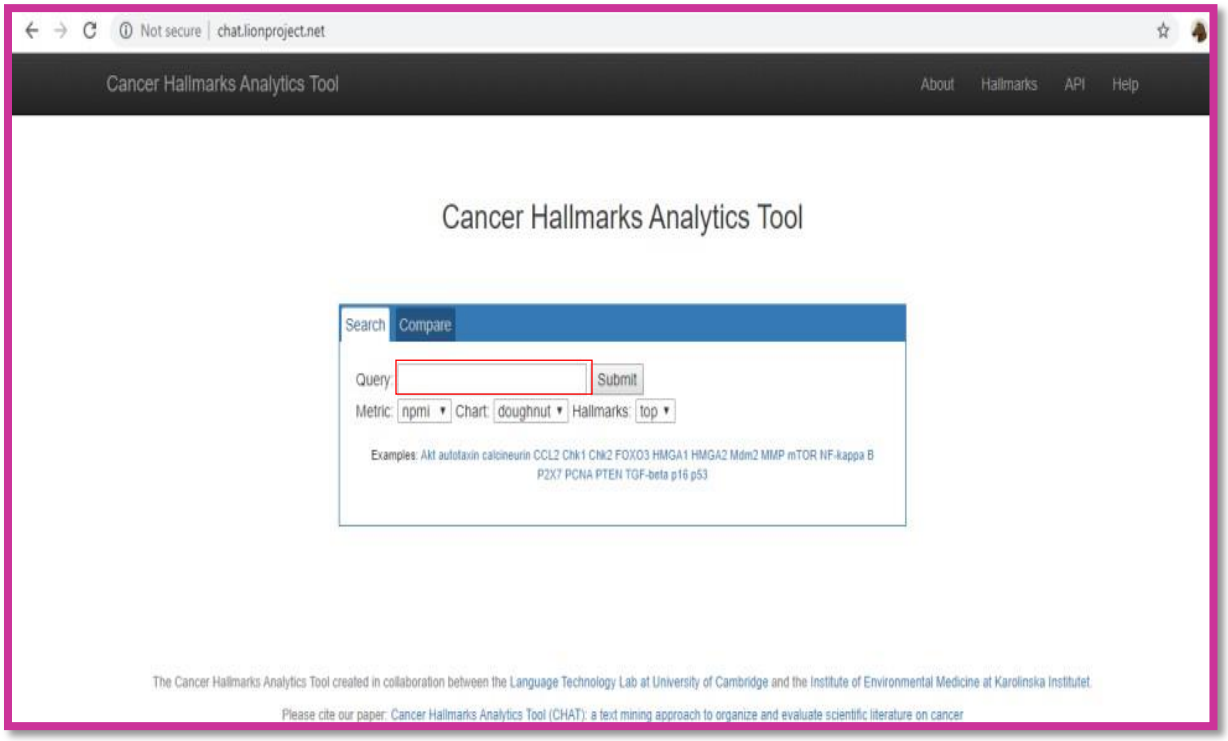


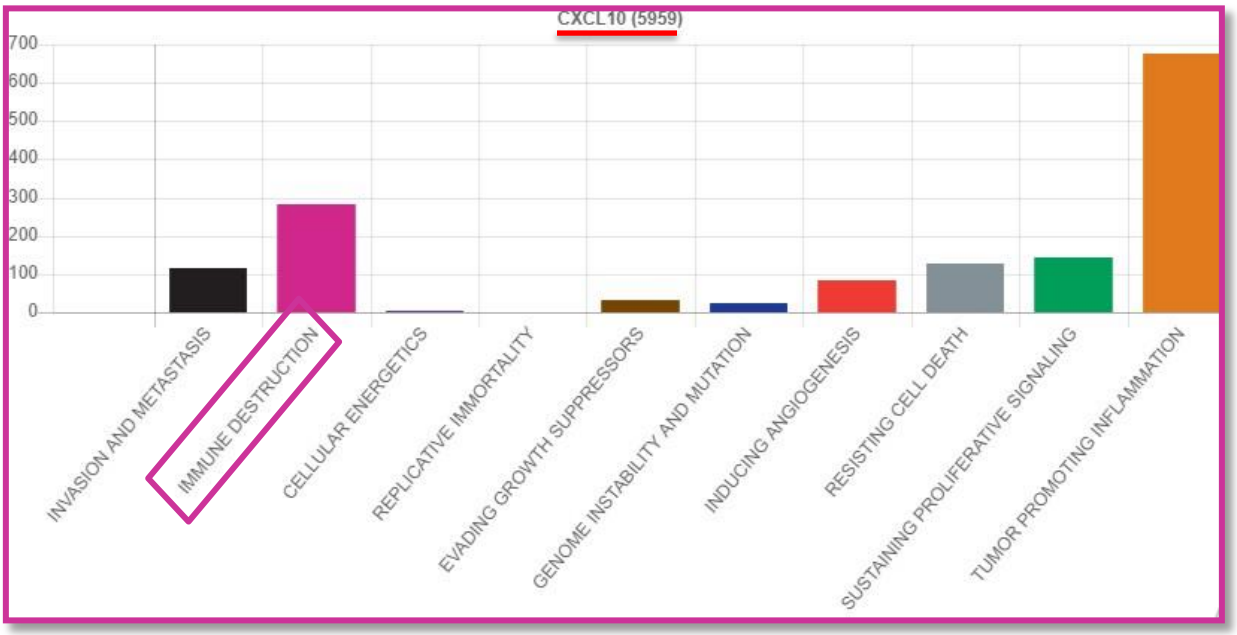
				CXCL9 ortholog	(PTHR10179:SF44)		
	11.	HUMAN|HGNC=2389|UniProtKB=P02511	CRYAB	Alpha-crystallin B chain CRYAB ortholog	ALPHA-CRYSTALLIN B CHAIN (PTHR45640:SF5)	-	Homo sapiens
	12.	HUMAN|HGNC=26511|UniProtKB=O14558	HSPB6	Heat shock protein beta-6 HSPB6 ortholog	HEAT SHOCK PROTEIN BETA-6 (PTHR45640:SF2)	-	Homo sapiens
	13.	HUMAN|HGNC=31791|UniProtKB=Q6ZT52	FAM43B	Protein FAM43B FAM43B ortholog	PROTEIN FAM43B (PTHR11232:SF34)	signaling molecule	Homo sapiens
	14.	HUMAN|HGNC=30014|UniProtKB=Q96LB9	PGLYRP3	Peptidoglycan recognition protein 3 PGLYRP3 ortholog	PEPTIDOGLYCAN RECOGNITION PROTEIN 3 (PTHR11022:SF12)	-	Homo sapiens
	15.	HUMAN|HGNC=30013|UniProtKB=Q96PD5	PGLYRP2	N-acetylmuramoyl-L-alanine amidase PGLYRP2 ortholog	N-ACETYLMURAMOYL-L-ALANINE AMIDASE (PTHR11022:SF66)	-	Homo sapiens
	16.	HUMAN|HGNC=433|UniProtKB=P16050	ALOX15	Arachidonate 15-lipoxygenase ALOX15 ortholog	ARACHIDONATE 15-LIPOXYGENASE (PTHR11771:SF33)	oxygenase	Homo sapiens
	17.	HUMAN|HGNC=16016|UniProtKB=Q5KU26	COLEC12	Collectin-12 COLEC12 ortholog	COLLECTIN-12 (PTHR24023:SF910)	extracellular matrix structural protein	Homo sapiens
	18.	HUMAN|HGNC=24954|UniProtKB=Q8WW32	HMGB4	High mobility group protein B4 HMGB4 ortholog	HIGH MOBILITY GROUP PROTEIN B4 (PTHR13711:SF152)	HMG box transcription factor chromatin/chromatin-binding protein signaling molecule	Homo sapiens
	19.	HUMAN|HGNC=30040|UniProtKB=Q9BZM2	PLA2G2F	Group IIF secretory phospholipase A2 PLA2G2F ortholog	GROUP IIF SECRETORY PHOSPHOLIPASE A2 (PTHR11716:SF8)	phospholipase	Homo sapiens
	20.	HUMAN|HGNC=10637|UniProtKB=P02778	CXCL10	C-X-C motif chemokine 10 CXCL10 ortholog	C-X-C MOTIF CHEMOKINE 10 (PTHR10179:SF47)	chemokine	Homo sapiens

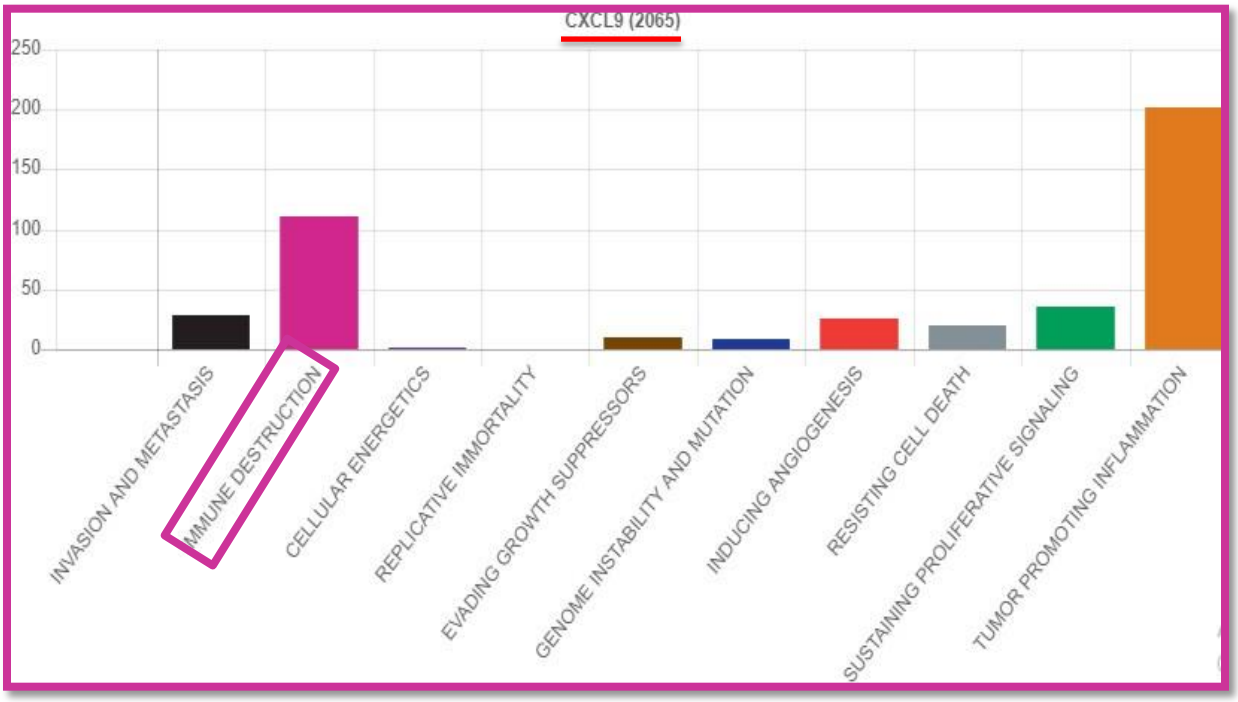
Supplementary 2. Expression of Genes, protein classes related to the Immune System Results of Pantherdb Analysis

Gene symbol	Gene name	Protein classes
HEPACAM	*Hepatocyte cell adhesion molecule*	*cell adhesion molecule, immunoglobulin receptor superfamily, protein kinase, the signaling molecule*
BTNL3	*Butyrophilin-like protein 3*	*protease inhibitor*
REG3A	*Regenerating islet-derived protein 3-alpha*	
REG1B	*Lithostathine-1-beta*	
DPP6	*Dipeptidyl aminopeptidase-like protein 6*	*enzyme modulator, the serine protease*
REG1A	*Lithostathine-1-alpha*	
CXCL11	*C-X-C motif chemokine 11*	*Chemokine*
CLEC6A	*C-type lectin domain family 6 member A*	*cell adhesion molecule, immunoglobulin receptor superfamily*
GGT1	*Glutathione hydrolase 1 proenzyme*	*protease, acyltransferase*
CXCL9	*C-X-C motif chemokine 9*	*Chemokine*
CRYAB	*Alpha-crystallin B chain*	
HSPB6	*Heat shock protein beta-6*	
FAM43B	*Protein FAM43B*	*signaling molecule*
PGLYRP3	*Peptidoglycan recognition protein 3*	
PGLYRP2	*N-acetylmuramoyl-L-alanine amidase*	
ALOX15	*Arachidonate 15-lipoxygenase*	*Oxygenase*
COLEC12	*Collectin-12*	*extracellular matrix structural protein*
HMGB4	*High mobility group protein B4*	*HMG box transcription factor, chromatin/chromatin-binding protein, dan signaling molecule*
PLA2G2F	*Group IIF secretory phospholipase A2*	*Phospholipase*
CXCL10	*C-X-C motif chemokine 10*	*Chemokine*

Supplementary 3. Analysis hallmark of cancer using lionproject.net tool.






CXCL9 (2065)
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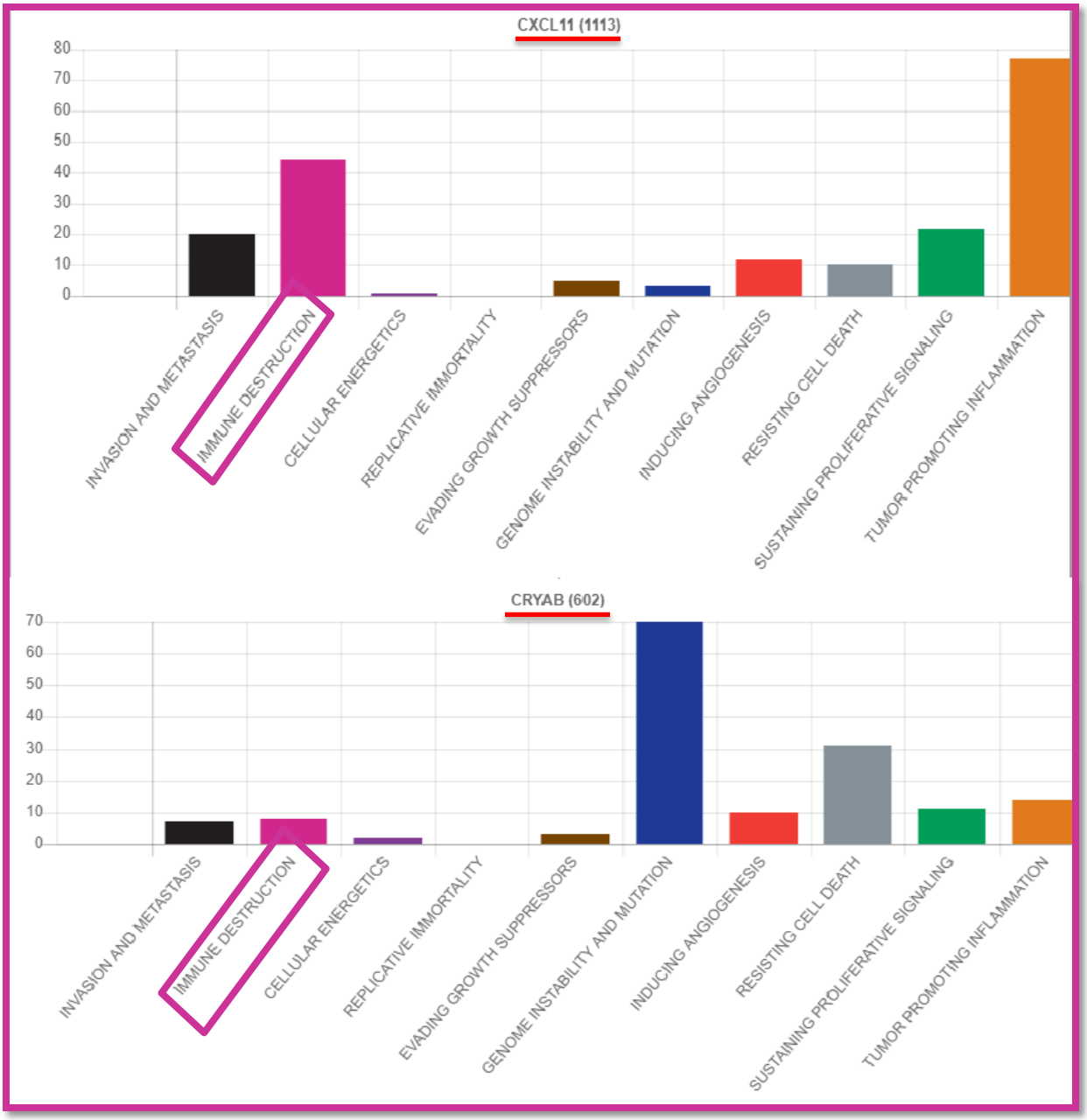
200
150
100
50
0
INVASION AND METASTASIS
IMMUNE DESTRUCTION
CELLULAR ENERGETICS
REPLICATIVE IMMORTALITY
EVADING GROWTH SUPPRESSORS
GENOME INSTABILITY AND MUTATION
INDUCING ANGIOGENESIS
RESISTING CELL DEATH
SUSTAINING PROLIFERATIVE SIGNALING
TUMOR PROMOTING INFLAMMATION


CXCL11 (1113)
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70
60
50
40
30
20
10
0
INVASION AND METASTASIS
IMMUNE DESTRUCTION
CELLULAR ENERGETICS
REPLICATIVE IMMORTALITY
EVADING GROWTH SUPPRESSORS
GENOME INSTABILITY AND MUTATION
INDUCING ANGIOGENESIS
RESISTING CELL DEATH
SUSTAINING PROLIFERATIVE SIGNALING
TUMOR PROMOTING INFLAMMATION
CRYAB (602)
70
60
50
40
30
20
10
0
INVASION AND METASTASIS
IMMUNE DESTRUCTION
CELLULAR ENERGETICS
REPLICATIVE IMMORTALITY
EVADING GROWTH SUPPRESSORS
GENOME INSTABILITY AND MUTATION
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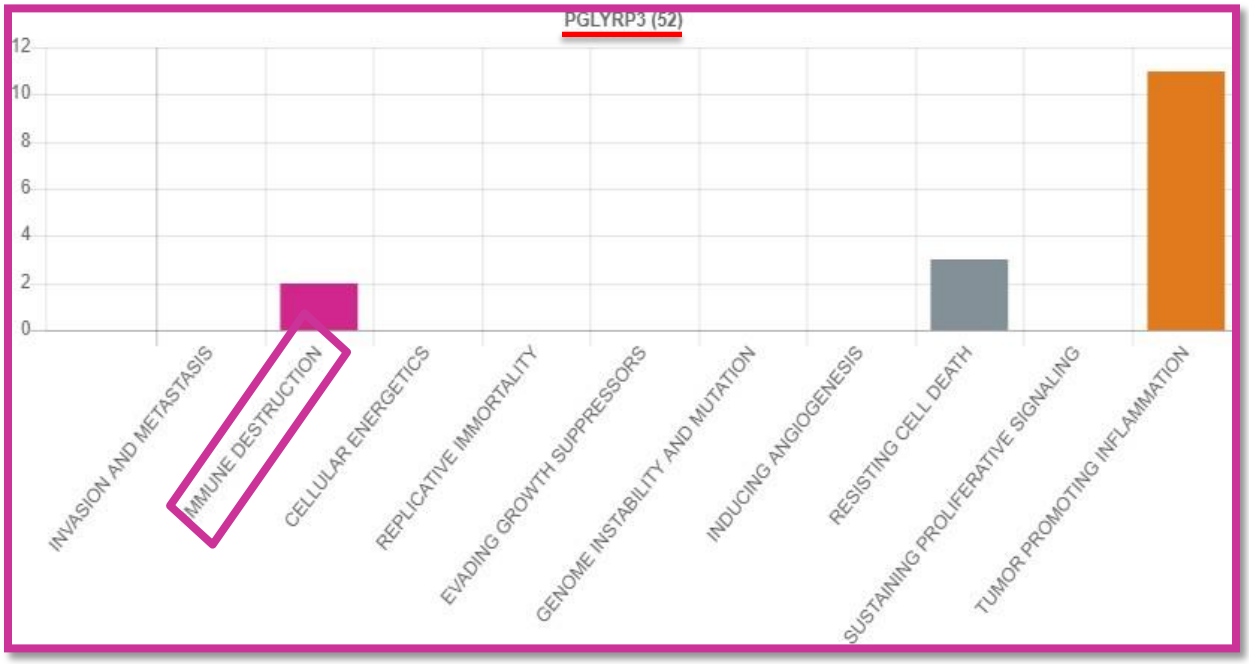
TUMOR PROMOTING INFLAMMATION


PGLYRP3 (52)
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10
8
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4
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INVASION AND METASTASIS
IMMUNE DESTRUCTION
CELLULAR ENERGETICS
REPLICATIVE IMMORTALITY
EVADING GROWTH SUPPRESSORS
GENOME INSTABILITY AND MUTATION
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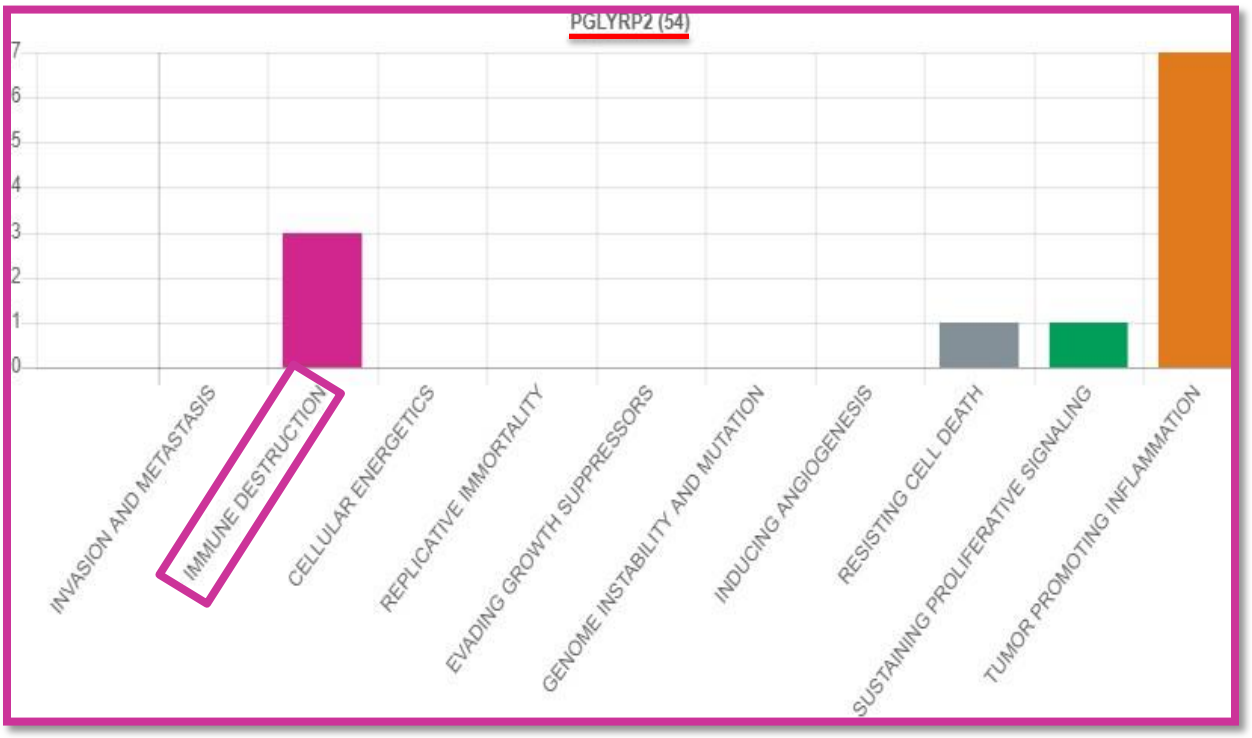
TUMOR PROMOTING INFLAMMATION


PGLYRP2 (54)
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6
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2
1
0
INVASION AND METASTASIS
IMMUNE DESTRUCTION
CELLULAR ENERGETICS
REPLICATIVE IMMORTALITY
EVADING GROWTH SUPPRESSORS
GENOME INSTABILITY AND MUTATION
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RESISTING CELL DEATH
SUSTAINING PROLIFERATIVE SIGNALING
TUMOR PROMOTING INFLAMMATION

Supplementary 4. Analysis of biological signaling pathway using the DAVID Bioinformatics tool.

322 record(s)

Download File

CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Bos taurus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Callithrix jacchus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Ursus maritimus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Macaca fascicularis
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Pan paniscus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Homo sapiens
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Macaca mulatta
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Myotis brandtii
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Lipotes vexillifer
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Equus caballus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Ovis aries
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Capra hircus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, Chemokine signaling pathway, Toll-like receptor signaling pathway, RIG-I-like receptor signaling pathway, Cytosolic DNA-sensing pathway, TNF signaling pathway, Influenza A,		
CXCL10	C-X-C motif chemokine ligand 10(CXCL10)	Related Genes	Oryctolagus cuniculus