

# Output results of CLIME (CLustering by Inferred Models of Evolution)

## Dataset:

Num of genes in input gene set: 2

Total number of genes: 20834

Prediction LLR threshold: 0

The CLIME PDF output two sections:

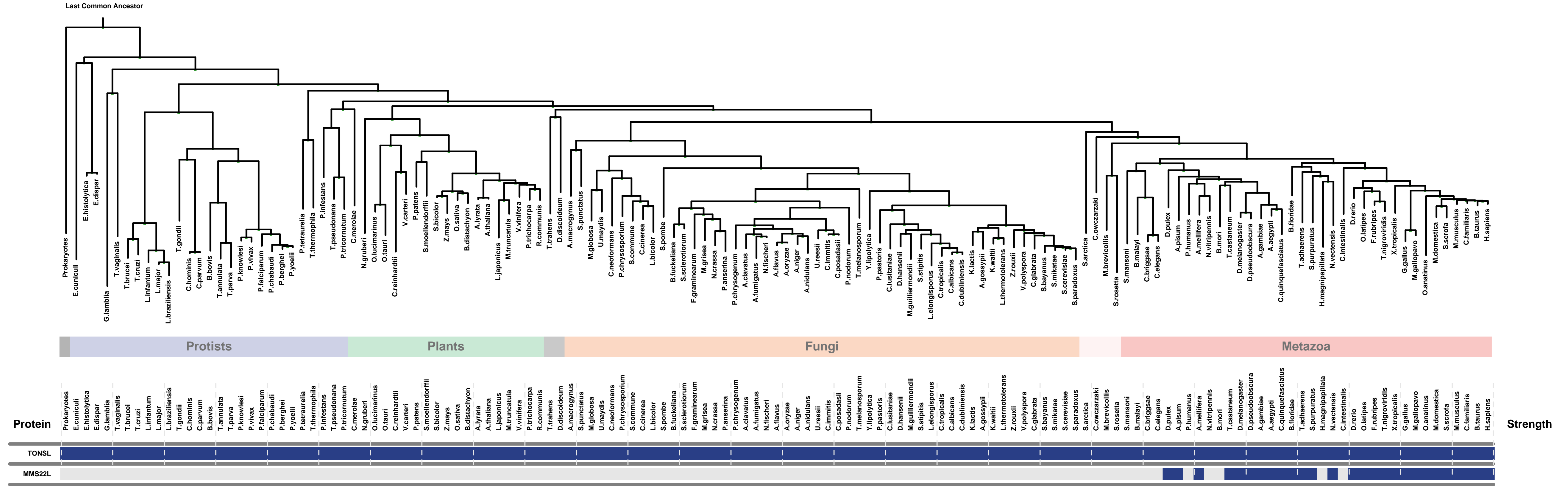
### 1) Overview of Evolutionarily Conserved Modules (ECMs)

- Top panel shows the predefined species tree.
- Bottom panel shows the partition of input genes into Evolutionary Conserved Modules (ECMs), ordered by ECM strength (shown at right), and separated by horizontal lines.
- Each row show one gene, where the phylogenetic profile indicates presence (blue) or absence (gray) of homologs in each species (column).
- Gene symbols are shown at left. Gray color indicates that the gene is a paralog to a higher scoring gene within the same ECM (based on BLASTP  $E < 1e-3$ ).

### 2) Details of each ECM and its expansion ECM+

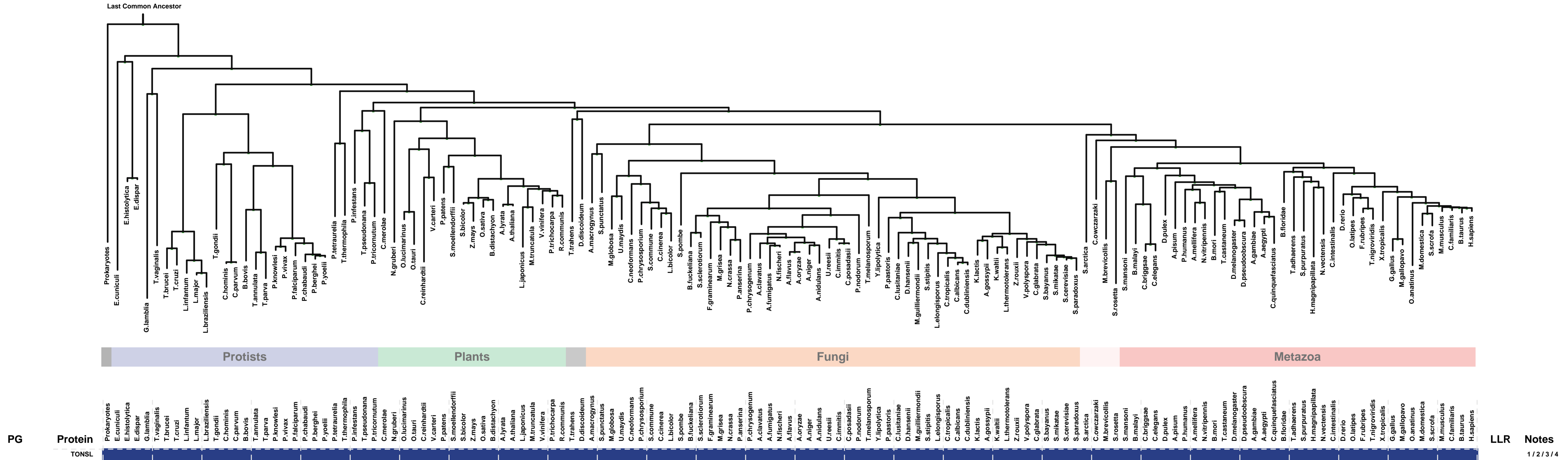
- Top panel shows the inferred evolutionary history on the predefined species tree. Branch color shows the gain event (blue) and loss events (red color, with brighter color indicating higher confidence in loss). Branches before the gain or after a loss are shown in gray.
- Bottom panel shows the input genes that are within the ECM (blue/white rows) as well as all genes in the expanded ECM+ (green/gray rows). The ECM+ includes genes likely to have arisen under the inferred model of evolution relative to a background model, and scored using a log likelihood ratio (LLR).
- PG indicates "paralog group" and are labeled alphabetically (i.e., A, B). The first gene within each paralog group is shown in black color. All other genes sharing sequence similarity (BLAST  $E < 1e-3$ ) are assigned to the same PG label and displayed in gray.

# Overview of Evolutionarily Conserved Modules (ECMs)



ECM 1, Gene set "FACT complex", Page 1

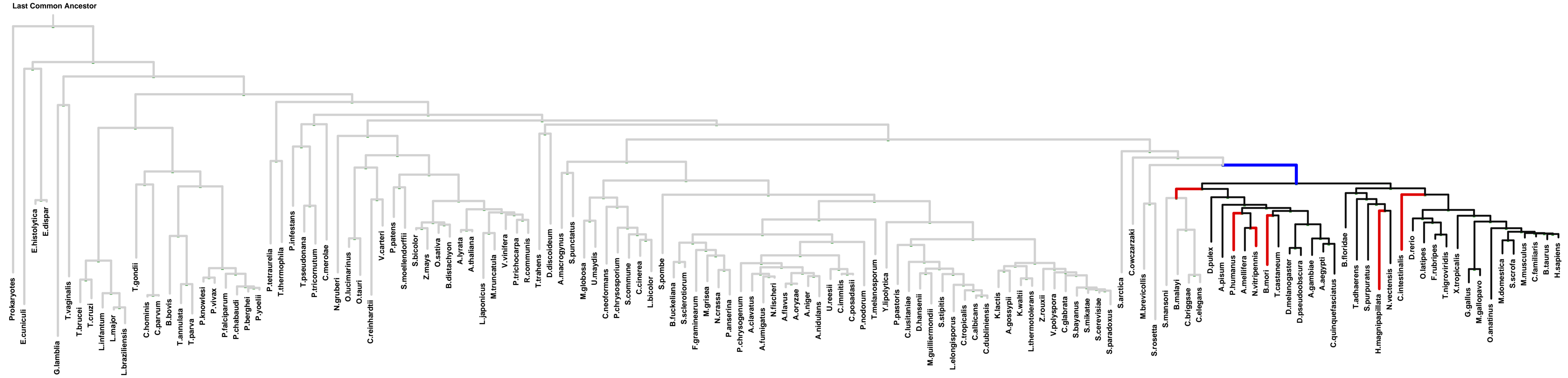
Num of ECM Genes: 1. Num of Predicted Genes: 0



1: DNA replication factor A complex || 2: FACT complex || 3: MCM complex || 4: nuclear replication fork

ECM 2, Gene set "FACT complex", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 109



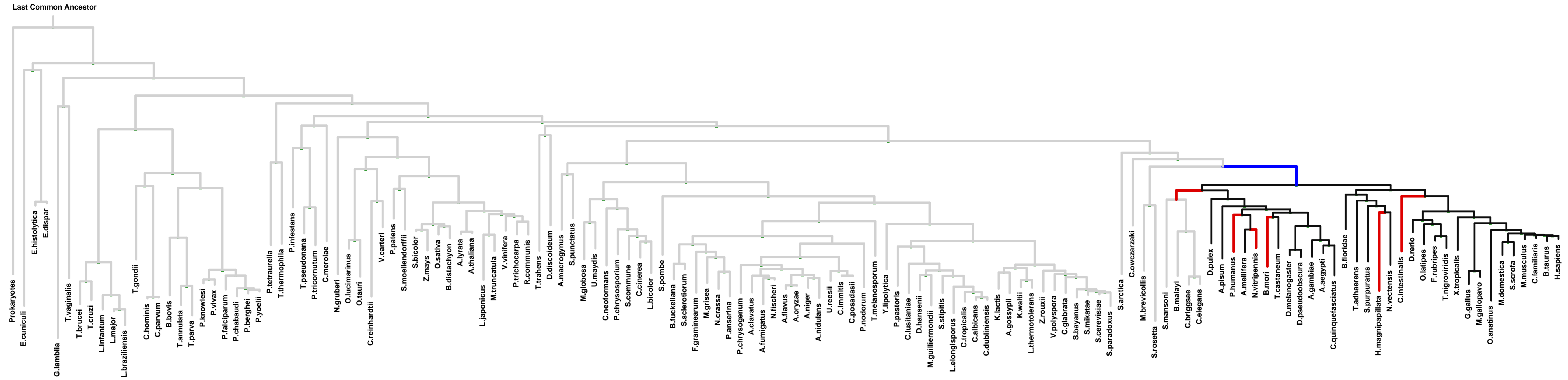
PG	Protein	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	MMS22L					19.5	1 / 2 / 3
A	OR6K6					18.0	4
A	COX16					16.2	5 / 6 / 7 / 8 / 9
A	GOLIM4					13.6	
A	C16orf87					13.0	
A	OR10Z1					12.8	
A	OR10H1					12.8	
A	OR10H2					12.7	
B	LYPD6					12.7	
B	LYPD6B					12.7	10
A	OR10G9					12.6	
A	YAF2					12.3	
A	SOST					10.9	11
A	OR51D1					10.9	
A	FGF23					10.3	
A	TMEM14B					10.2	
A	WISP2					10.1	
A	OR8K1					9.9	
A	OR52D1					9.9	
A	CRB3					9.1	12
A	OR51F2					9.1	
C	EDA					8.7	13 / 14
A	NDUFA1					8.6	4 / 15
A	OR10H5					8.5	
A	TIMP1					8.2	16 / 17
A	SPATA2L					8.1	
A	ATF4					7.9	18
A	GNG13					7.3	19
A	OR4C45					7.3	
A	OR51F1					7.2	
A	ITFG3					7.2	
D	FAM69C					7.2	
D	FAM69B					7.2	
E	FAM122C					6.8	
E	TAPBPL					6.4	

1: FACT complex || 2: MCM complex || 3: nuclear replication fork || 4: mitochondrial membrane || 5: cis-Golgi network || 6: endocytic vesicle || 7: endosome membrane || 8: Golgi cisterna membrane || 9: Golgi lumen || 10: anchored to membrane || 11: extracellular matrix || 12: tight junction || 13: apical part of cell || 14: collagen || 15: mitochondrial respiratory chain complex I || 16: basement membrane || 17: platelet alpha granule lumen || 18: microtubule organizing center || 19: heterotrimeric G-protein complex



# ECM 2, Gene set "FACT complex", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 109



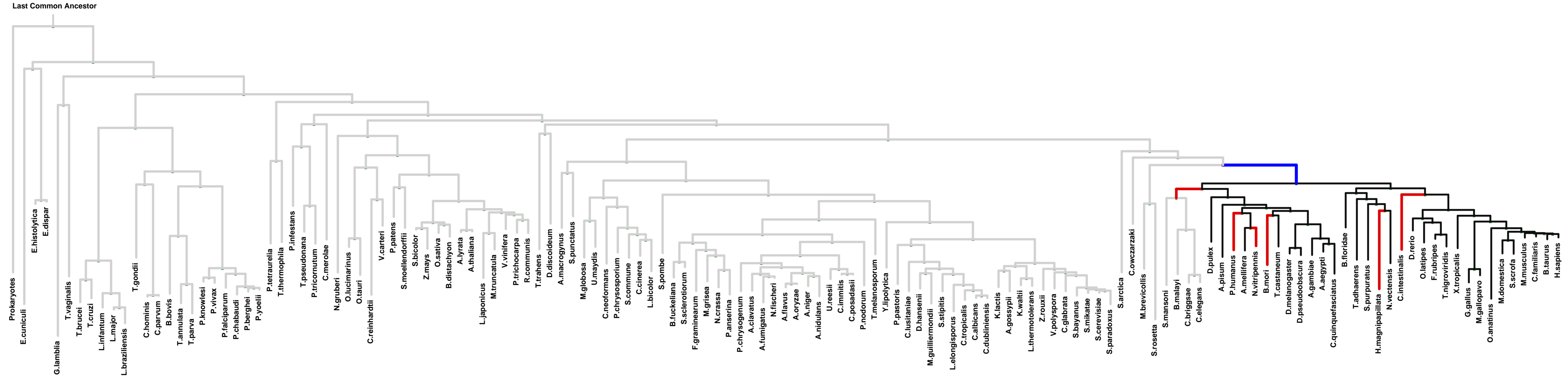
PG	Protein	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	FADD					6.3	1 / 2 / 3 / 4 / 5
	FASTKD2					6.3	
	EBAG9					6.2	6
	ARL6IP6					5.9	
	OR8B3					5.8	
A	TEFM					5.4	7 / 8
	MFF					5.3	9 / 10 / 11
	SMIM4					5.0	
	OCIAD2					4.8	12
	CCDC142					4.7	
A	OR10X1					4.6	
	METRN					4.5	
	METRNL					4.5	
	OR6B2					4.4	
	OR6B3					4.4	
A	OR52N5					4.4	
	FANCA					4.2	13
	OR11L1					4.1	
	OR5D18					4.0	
	FNDC5					4.0	14
A	OR5AU1					3.8	
	TMEM14E					3.7	
	GFRA1					3.7	15 / 16
	GFRA3					3.7	15 / 16 / 17
	OR1J2					3.6	
A	GPR151					3.6	
	OR6F1					3.6	
	XKR8					3.4	
	OR5AS1					3.3	
	OR1J4					3.1	
A	FAM162B					3.1	
	RASSF4					3.1	
	CRHBP					3.0	
	MRGPRX3					3.0	18 / 19 / 20 / 21 / 22 / 23
	OR4N4					2.9	

1: CD95 death-inducing signaling complex || 2: cell body || 3: death-inducing signaling complex || 4: membrane raft || 5: neuron projection || 6: focal adhesion || 7: mitochondrial nucleoid || 8: ribonucleoprotein complex || 9: integral to mitochondrial membrane || 10: mitochondrial outer membrane || 11: peroxisome || 12: endosome || 13: Fanconi anaemia nuclear complex || 14: peroxisomal membrane || 15: anchored to membrane || 16: extrinsic to membrane || 17: external side of plasma membrane || 18: axon terminus || 19: dendrite || 20: dense core granule || 21: multivesicular body || 22: perikaryon || 23: secretory granule || 24: varicosity



ECM 2, Gene set "FACT complex", Page 4

Num of ECM Genes: 1. Num of Predicted Genes: 109



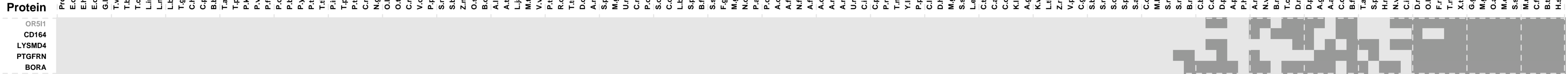
Protists

Plants

Fungi

Metazoa

PG  
A



Protein  
OR511  
CD164  
LYSMD4  
PTGFRN  
BORA

LLR Notes  
0.6  
0.5 1/2/3/4  
0.4  
0.3  
0.1

1: endosome || 2: endosome membrane || 3: lysosomal membrane || 4: lysosome