

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

Dataset:

Num of genes in input gene set: 9
Total number of genes: 20834
Prediction LLR threshold: 0

The CLIME PDF output two sections:

1) Overview of Evolutionarily Conserved Modules (ECMs)

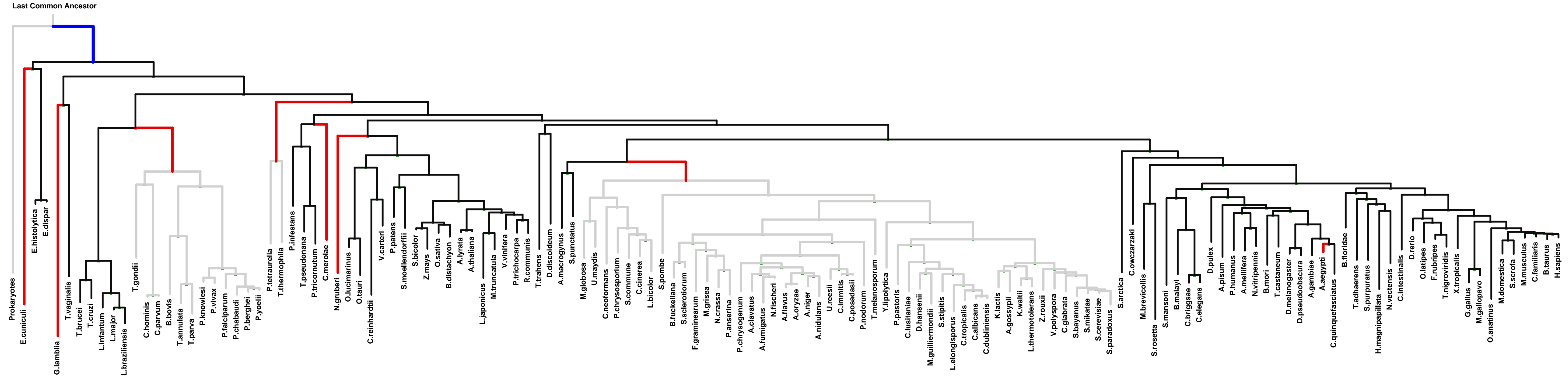
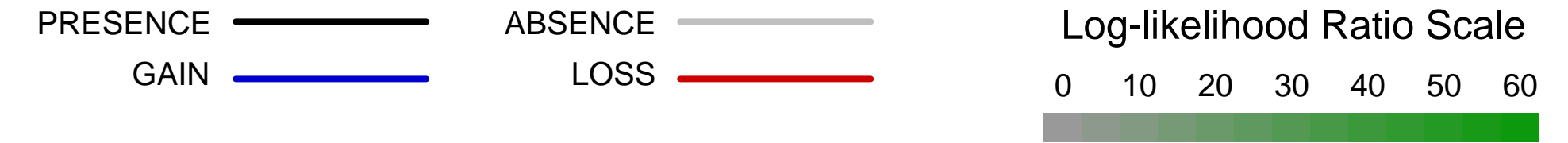
- Top panel shows the predefined species tree.
- Bottom panel shows the partition of input genes into Evolutionary Conserved Modules (ECMs), ordered by ECM strength (shown at right), and separated by horizontal lines.
- Each row show one gene, where the phylogenetic profile indicates presence (blue) 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.

ECM 1, Gene set "ciliary rootlet", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 14. ECM Strength: 4.5

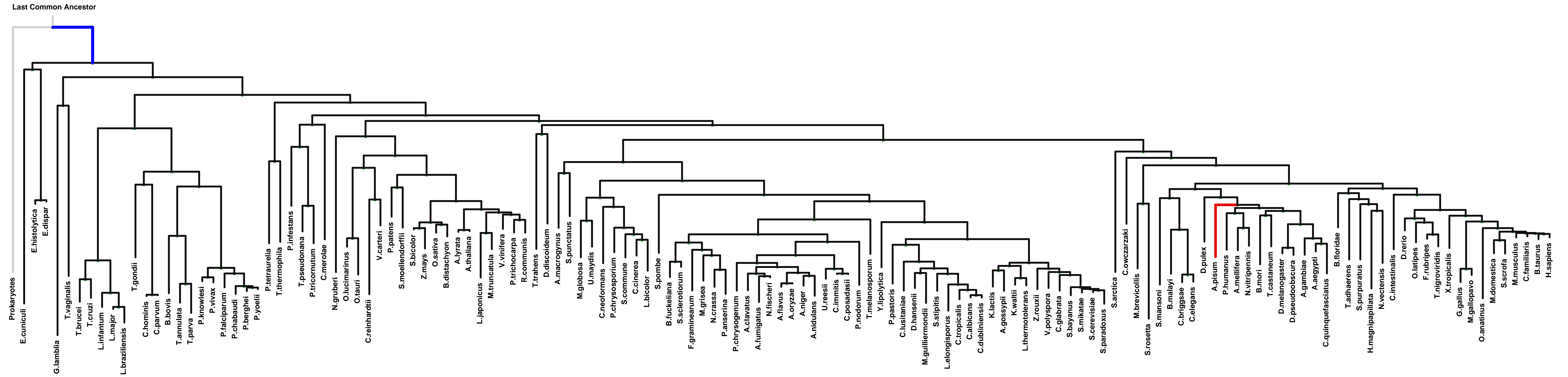


PG	Protein	Prokaryotes	Giardia	Trichomonads	Plants	Fungi	Metazoa	LLR	Notes
A	PSEN1	Present	Absent	Absent	Absent	Absent	Absent	7.2	1/2/3/4/5/6/7/8/9/10
A	PSEN2	Present	Absent	Absent	Absent	Absent	Absent	5.1	1/2/3/5/7/8/9/10
B	SERINC2	Absent	Present	Present	Present	Present	Present	3.3	
B	100508250	Absent	Present	Present	Present	Present	Present	3.2	9/18
B	SLC35A3	Absent	Present	Present	Present	Present	Present	2.7	19
B	NCSTN	Absent	Present	Present	Present	Present	Present	2.3	18/20/21/22/23
B	SH3YL1	Absent	Present	Present	Present	Present	Present	1.7	
B	MYH11	Absent	Present	Present	Present	Present	Present	1.1	
C	SLC35A1	Absent	Present	Present	Present	Present	Present	1.0	
C	GNPTG	Absent	Present	Present	Present	Present	Present	1.0	
C	DENND2C	Absent	Present	Present	Present	Present	Present	1.0	
C	ST5	Absent	Present	Present	Present	Present	Present	1.0	
C	DENND2D	Absent	Present	Present	Present	Present	Present	1.0	
C	RAB11FIP2	Absent	Present	Present	Present	Present	Present	0.4	24/25/26
C	ATG4B	Absent	Present	Present	Present	Present	Present	0.1	
C	DAGLB	Absent	Present	Present	Present	Present	Present	0.0	

1: axon || 2: cell cortex || 3: ciliary rootlet || 4: cytoplasmic vesicle || 5: dendritic shaft || 6: gamma-secretase complex || 7: growth cone || 8: kinetochore || 9: lysosomal membrane || 10: membrane raft || 11: neuromuscular junction || 12: nuclear membrane || 13: nuclear outer membrane || 14: rough endoplasmic reticulum || 15: smooth endoplasmic reticulum || 16: Z disc || 17: nuclear inner membrane || 18: melanosome || 19: ruffle membrane || 20: muscle myosin complex || 21: myosin filament || 22: smooth muscle contractile fiber || 23: stress fiber || 24: cytoplasmic vesicle membrane || 25: endosome || 26: recycling endosome membrane

ECM 2, Gene set "ciliary rootlet", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 0. ECM Strength: 0.0

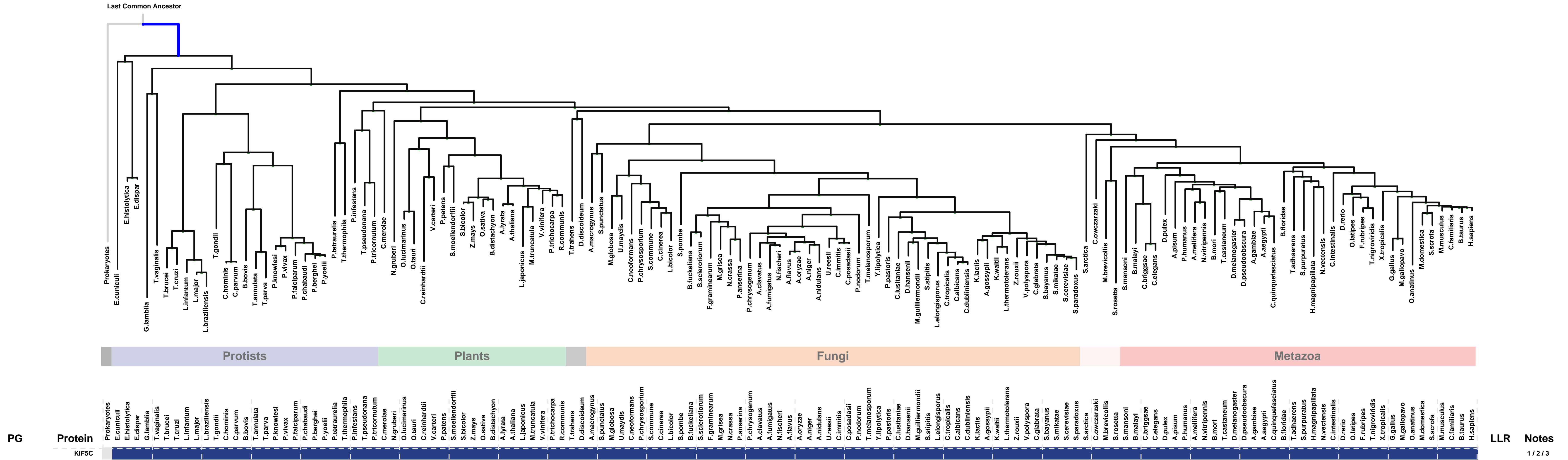


PG	Protein	LLR	Notes
A	KIF5A		1/2/3
A	KIF5B		2/3/4/5

1: axon part || 2: ciliary rootlet || 3: kinesin complex || 4: neuron projection || 5: vesicle

ECM 3, Gene set "ciliary rootlet", Page 1

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



PG

Protein

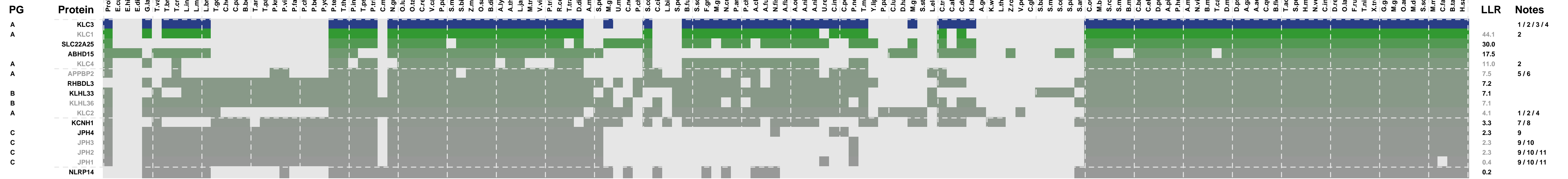
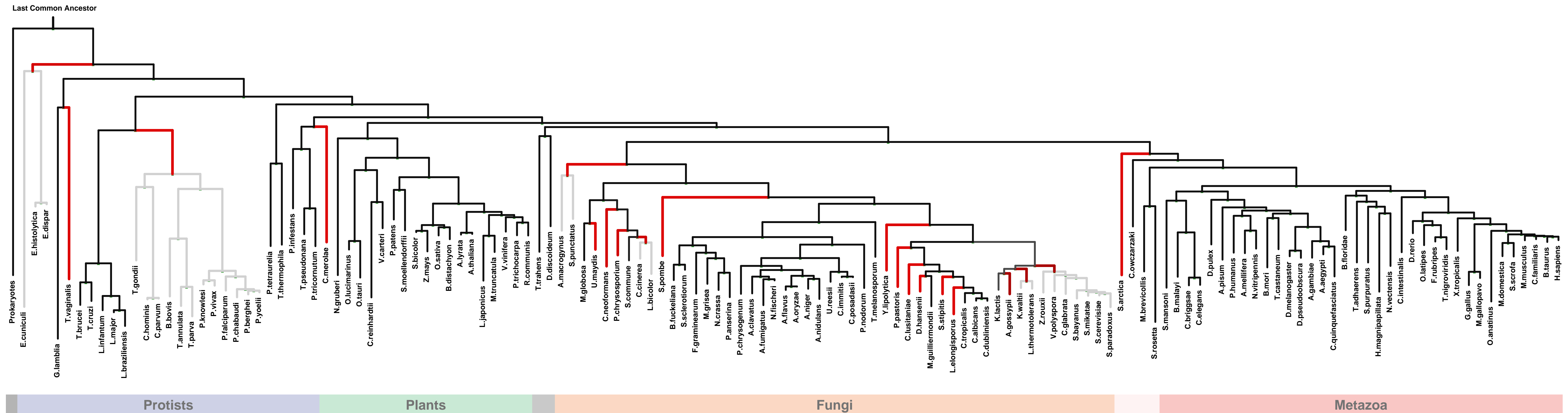


1: ciliary rootlet || 2: kinesin complex || 3: neuron projection

LLR Notes

ECM 5, Gene set "ciliary rootlet", Page 1

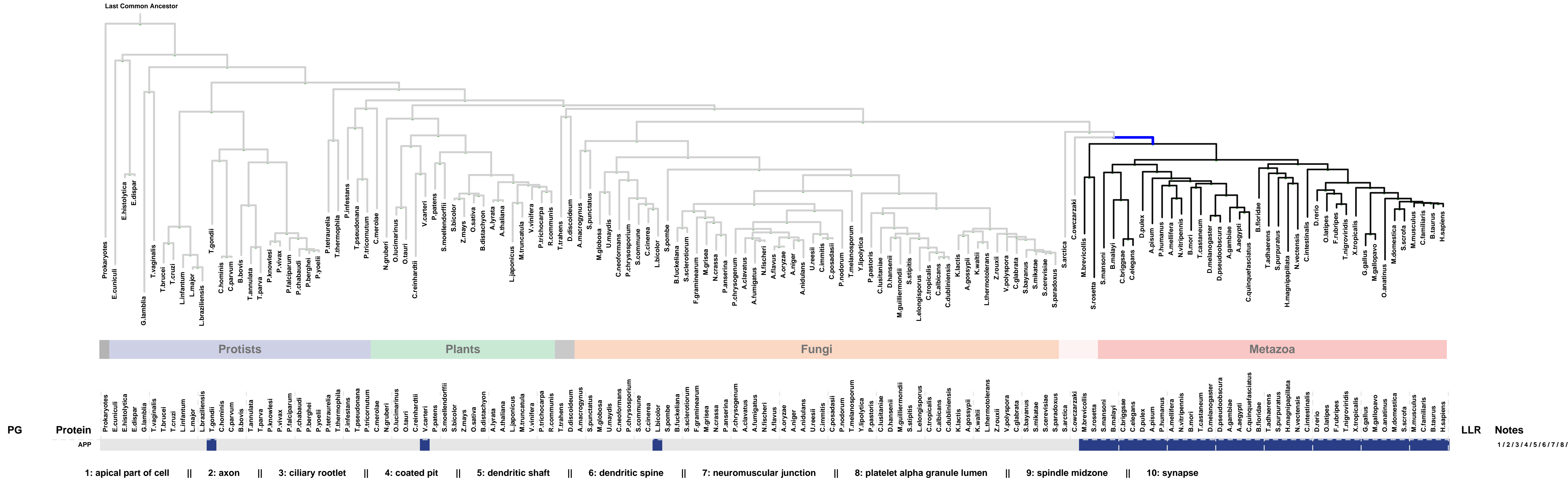
Num of ECM Genes: 1. Num of Predicted Genes: 15



1: ciliary rootlet || 2: kinesin complex || 3: microtubule-based flagellum || 4: neuron projection || 5: cytoplasmic vesicle membrane || 6: microtubule associated complex || 7: nuclear inner membrane || 8: voltage-gated potassium channel complex || 9: junctional sarcoplasmic reticulum membrane || 10: junctional membrane complex || 11: Z disc

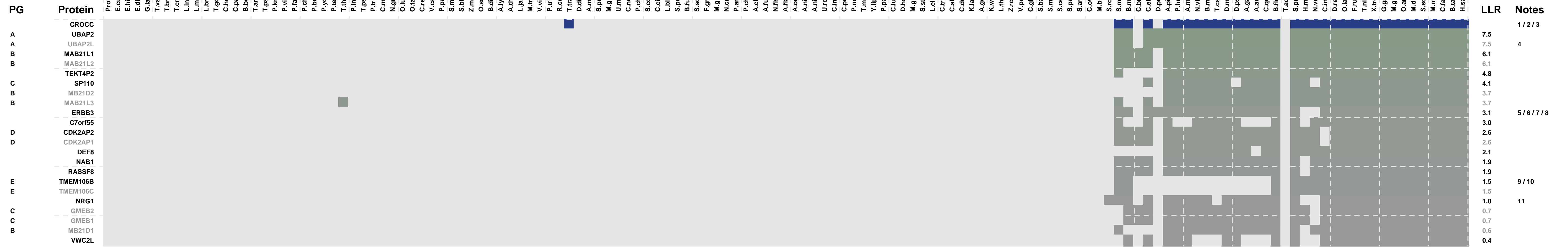
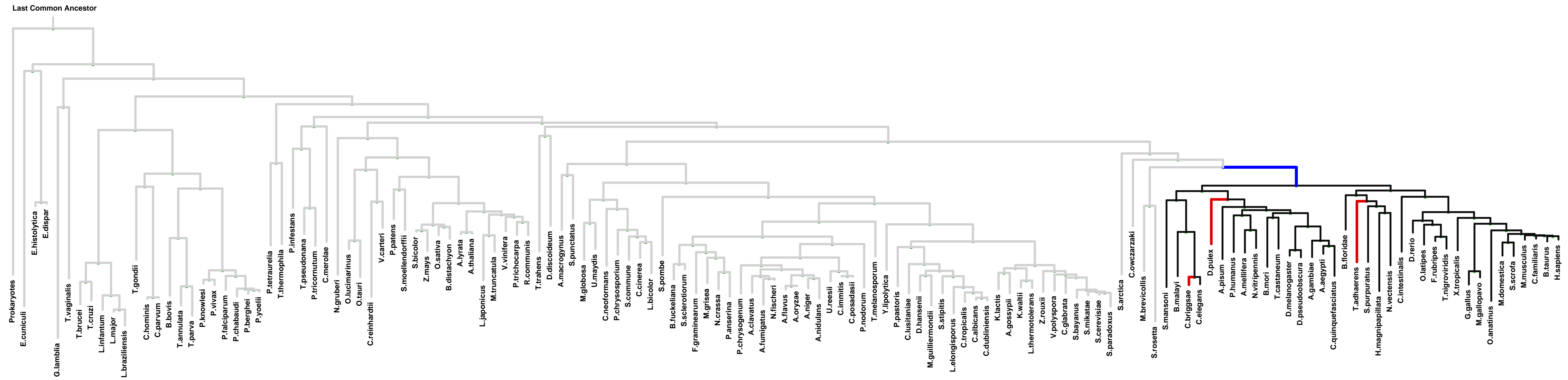
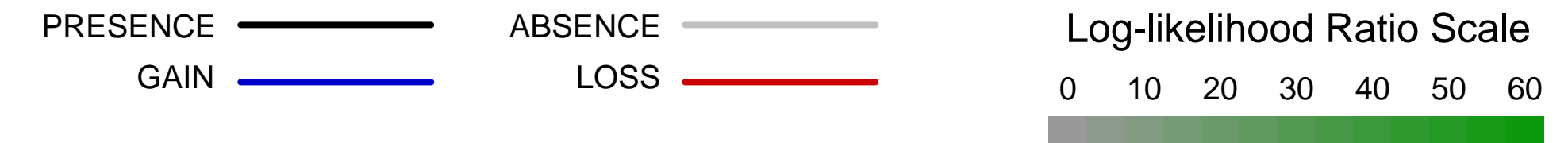
ECM 6, Gene set "ciliary rootlet", Page 1

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



ECM 7, Gene set "ciliary rootlet", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 22



1: actin cytoskeleton || 2: centriole || 3: ciliary rootlet || 4: Ada2/Gcn5/Ada3 transcription activator complex || 5: basolateral plasma membrane || 6: lateral plasma membrane || 7: postsynaptic membrane || 8: receptor complex || 9: late endosome membrane || 10: lysosomal membrane || 11: neuromuscular junction