

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)

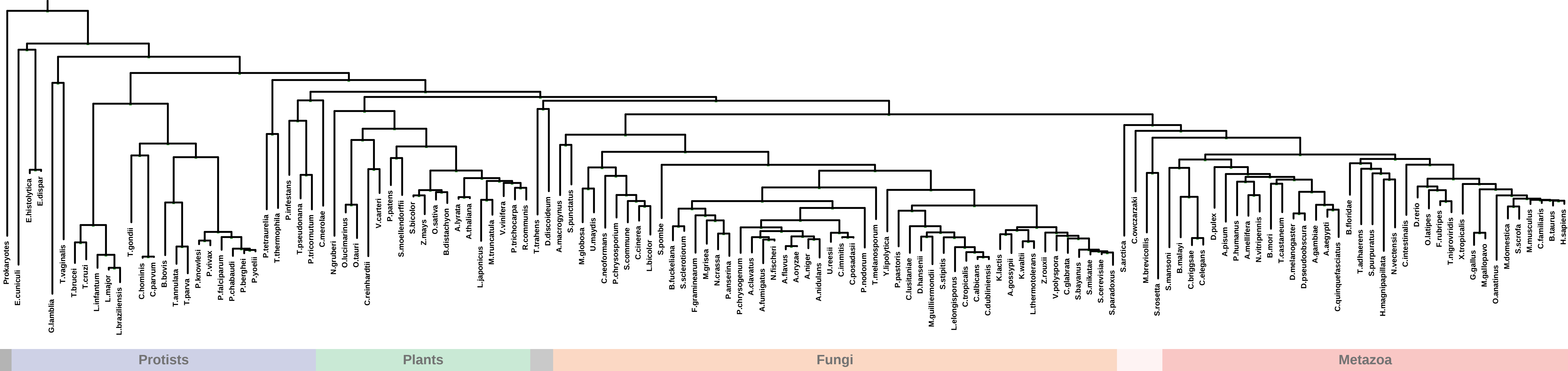
- Top panel shows the predefined species tree.
- Bottom panel shows the partition of input genes into Evolutionary Conserved Modules (ECMs), ordered by ECM strength (shown at right), and separated by horizontal lines.
- Each row show one gene, where the phylogenetic profile indicates presence (blue)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

Overview of Evolutionarily Conserved Modules (ECMs)

Last Common Ancestor



Protists

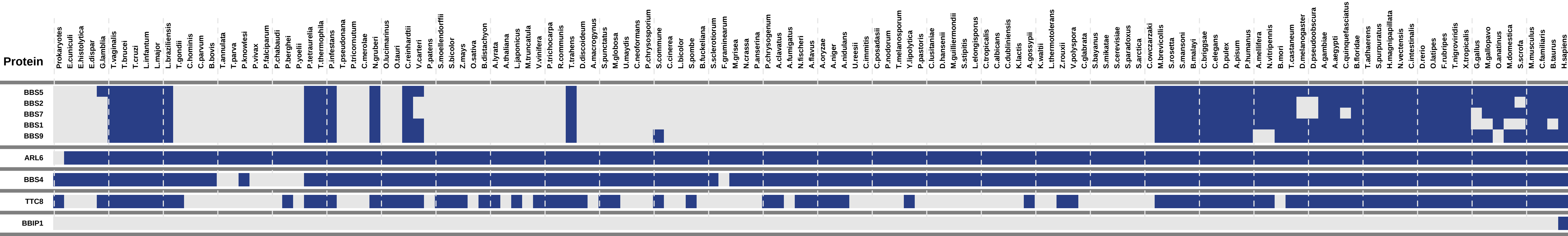
Plants

Fungi

Metazoa

Protein

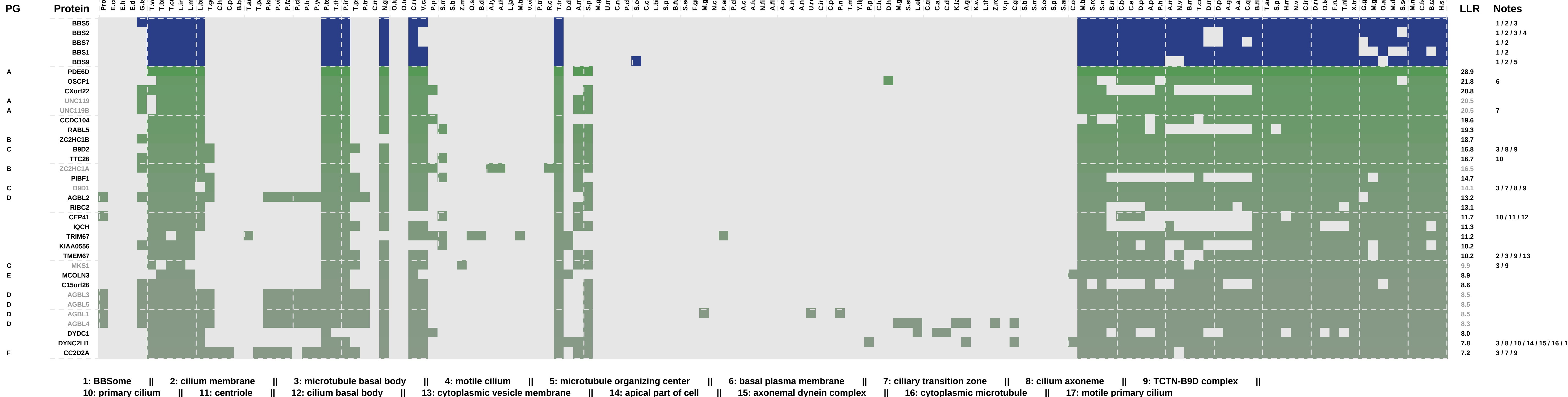
ECM 1
Informative



Strength

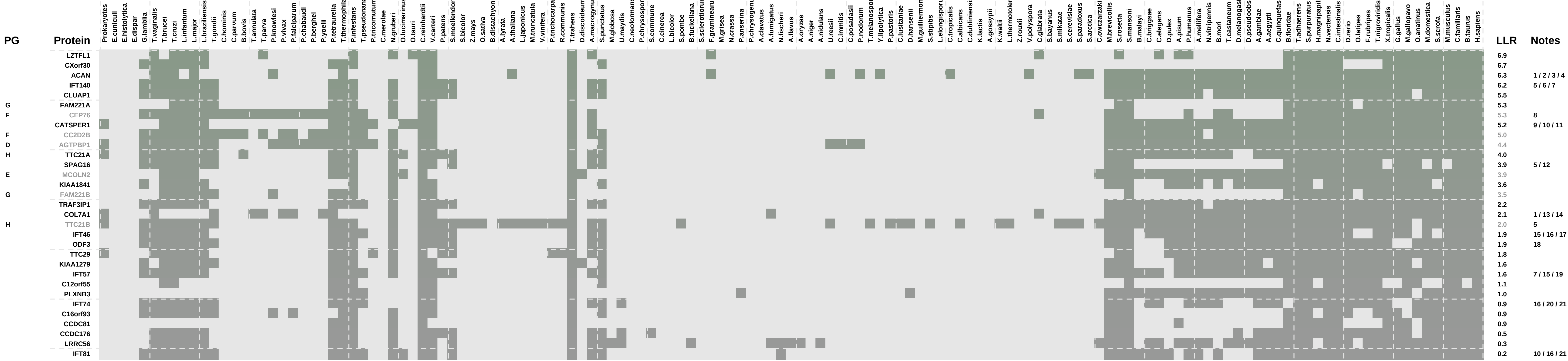
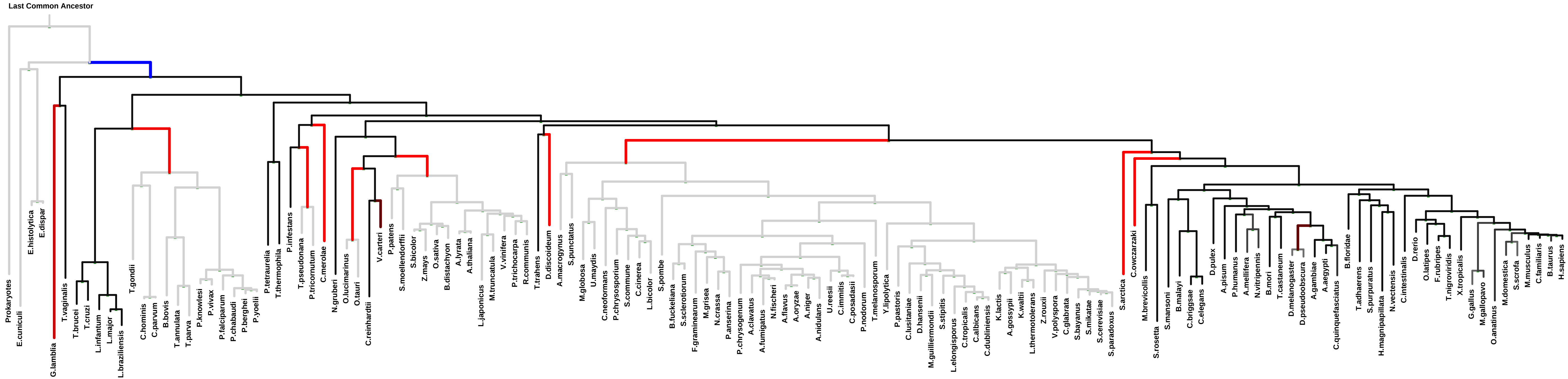
11.4

Num of ECM Genes: 5. Num of Predicted Genes: 61. ECM Strength: 11.4



ECM 1, Gene set "BBSome", Page 2

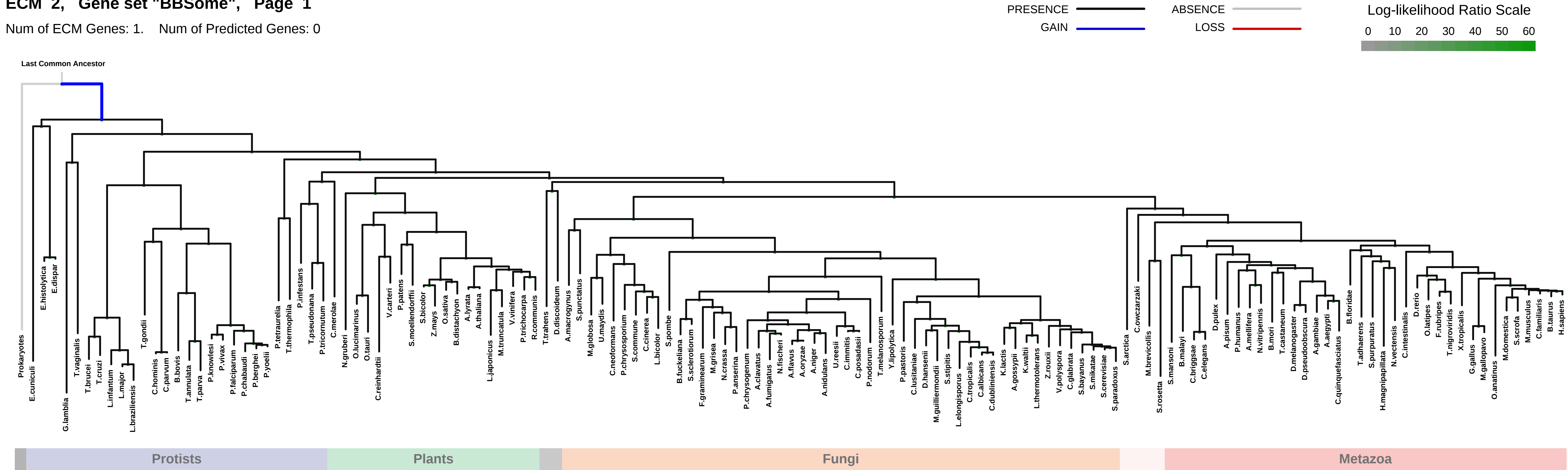
Num of ECM Genes: 5. Num of Predicted Genes: 61. ECM Strength: 11.4



1: extracellular matrix || 2: Golgi lumen || 3: lysosomal lumen || 4: proteinaceous extracellular matrix || 5: cilium axoneme || 6: cilium basal body || 7: photoreceptor connecting cilium || 8: centriole || 9: CatSper complex || 10: cilium || 11: flagellar membrane || 12: flagellar axoneme || 13: basement membrane || 14: endoplasmic reticulum lumen || 15: microtubule basal body || 16: microtubule-based flagellum || 17: motile primary cilium || 18: outer dense fiber || 19: dendrite terminus || 20: cytoplasmic membrane-bounded vesicle || 21: intraflagellar transport particle B

ECM 2, Gene set "BBSome", Page 1

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



PG

Protein

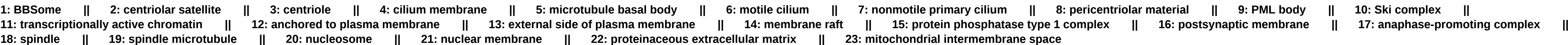
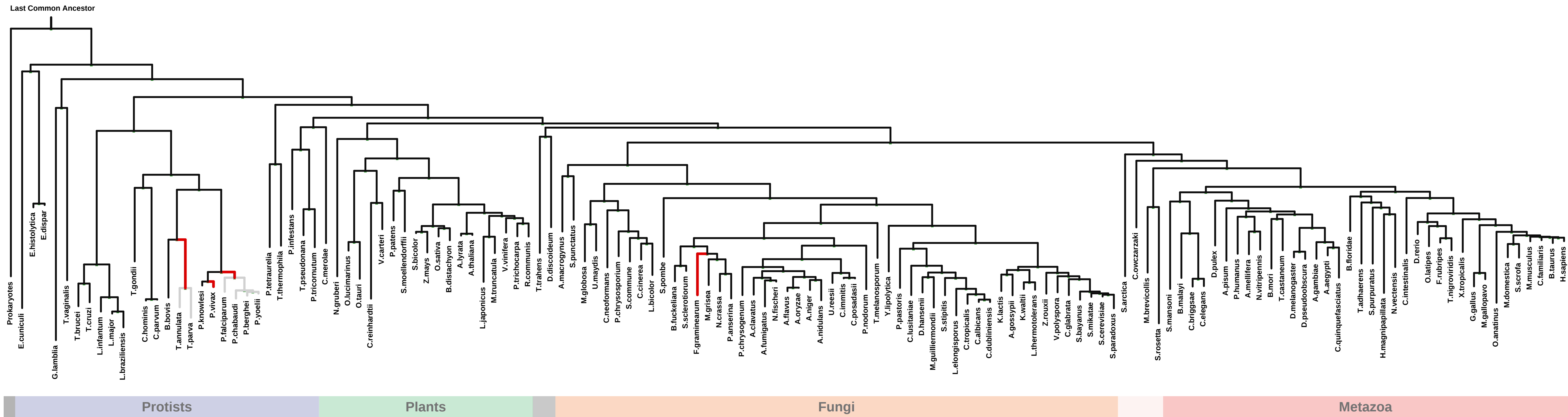
ARL6

LLR Notes

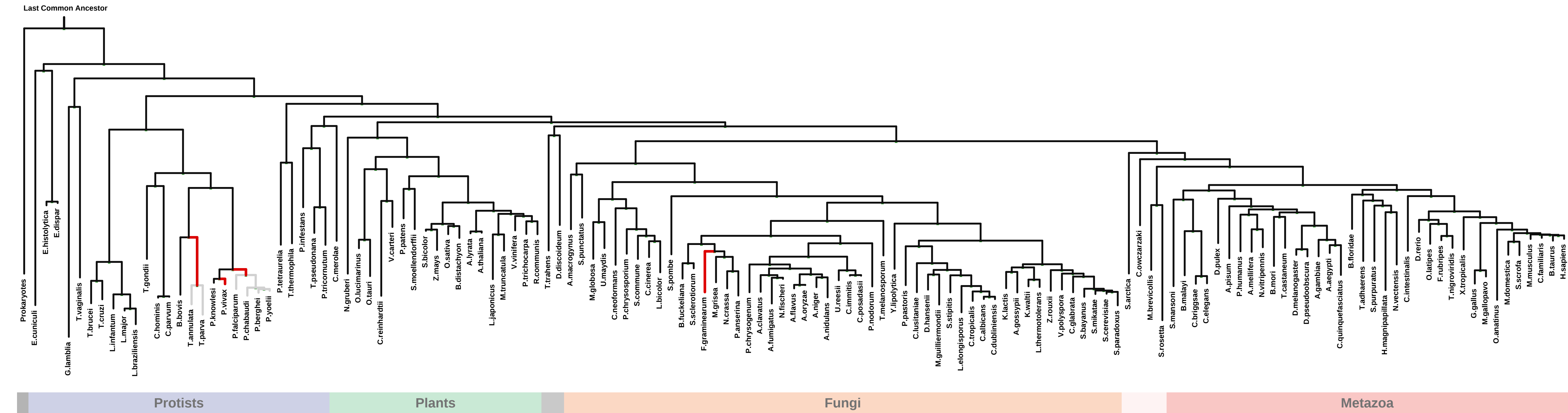
1 / 2 / 3 / 4 / 5 / 6

1: axonemal microtubule || 2: BBSome || 3: cilium axoneme || 4: cilium membrane || 5: membrane coat || 6: microtubule basal body

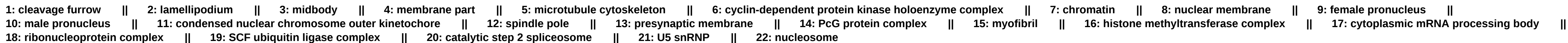
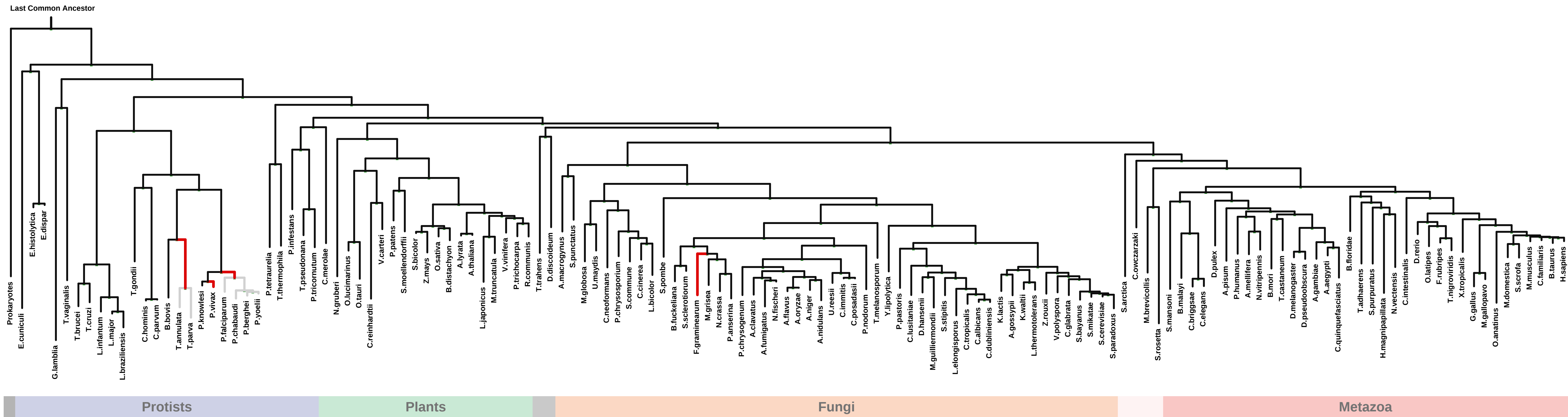
Num of ECM Genes: 1. Num of Predicted Genes: 169



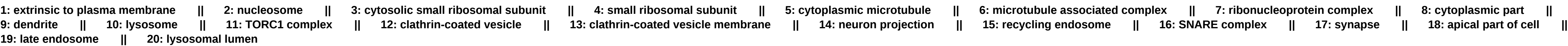
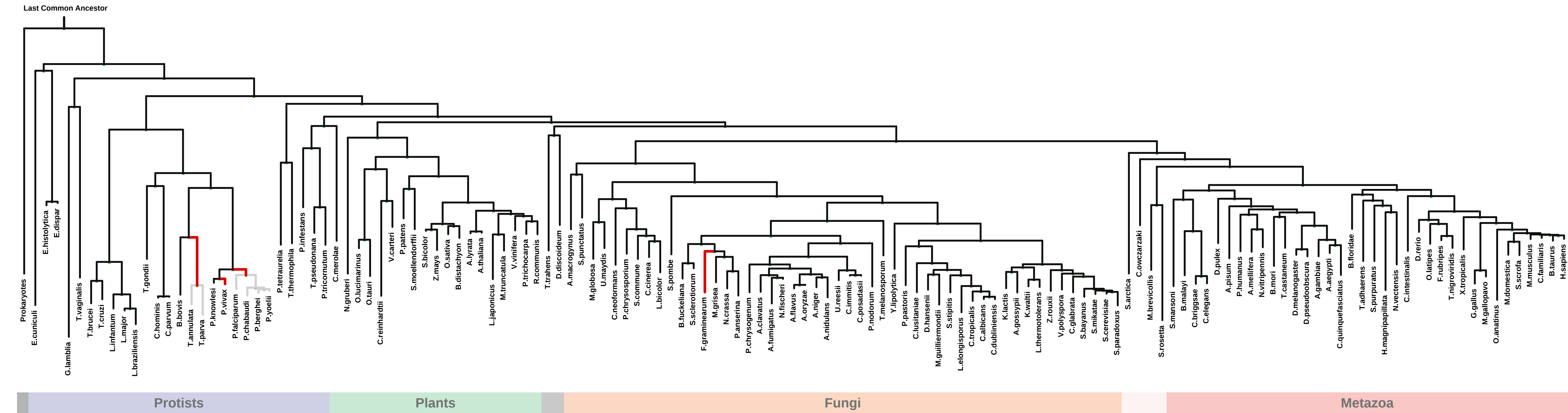
Num of ECM Genes: 1. Num of Predicted Genes: 169



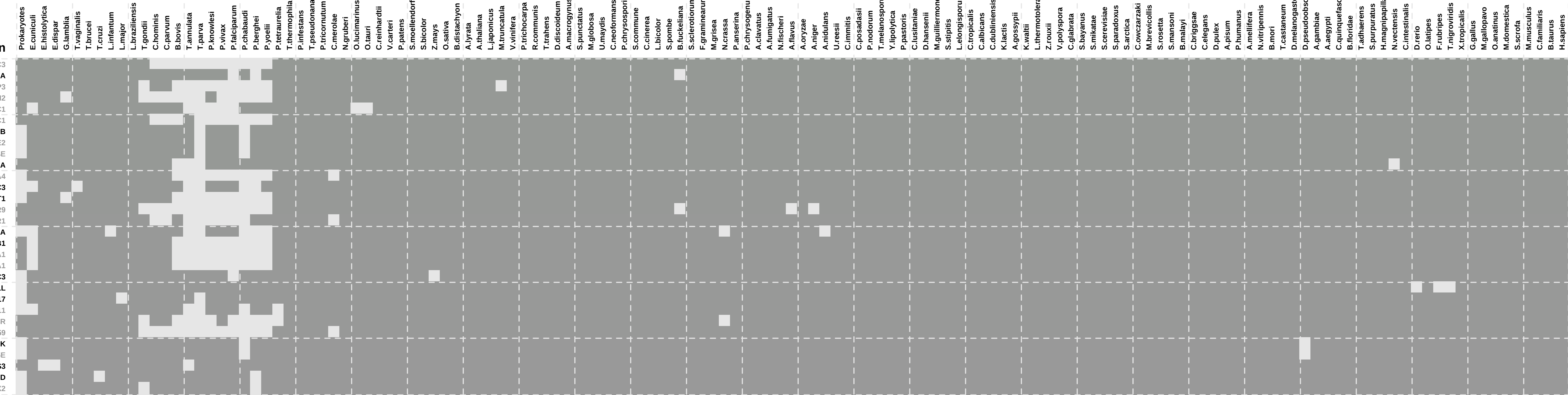
Num of ECM Genes: 1. Num of Predicted Genes: 169



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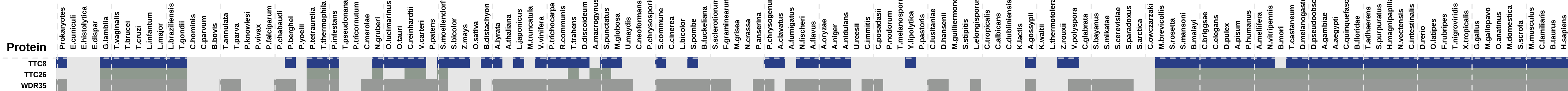
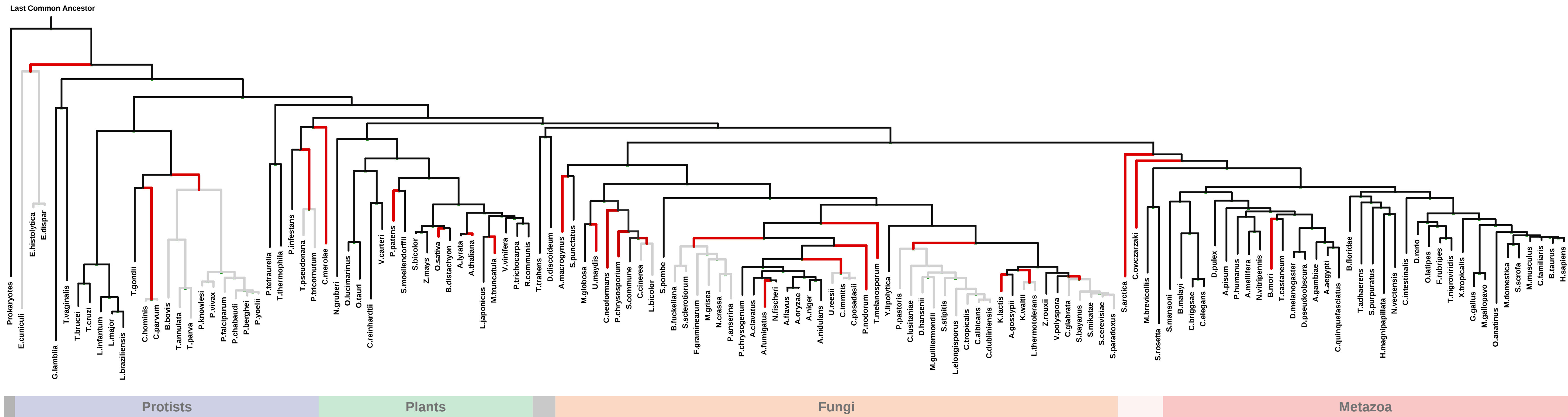
Num of ECM Genes: 1. Num of Predicted Genes: 169



LLR	Notes
1.7	
1.6	1 / 2 / 3 / 4
1.5	5 / 6 / 7 / 8 / 9 / 10
1.5	
1.4	
1.4	
1.2	11
1.2	11
1.2	11 / 12 / 13 / 14 / 15
1.1	
1.0	
0.9	
0.7	
0.7	16 / 17 / 18 / 19 / 20 / 21
0.6	
0.5	22 / 23 / 24 / 25 / 26 / 27
0.5	
0.5	
0.5	9 / 29 / 30
0.5	31
0.3	
0.2	32 / 33
0.2	34
0.2	35
0.2	9 / 23 / 36 / 37
0.2	38 / 39
0.1	40 / 41 / 42
0.1	43
0.0	7 / 16 / 44 / 45 / 46

ECM 4, Gene set "BBSome", Page 1

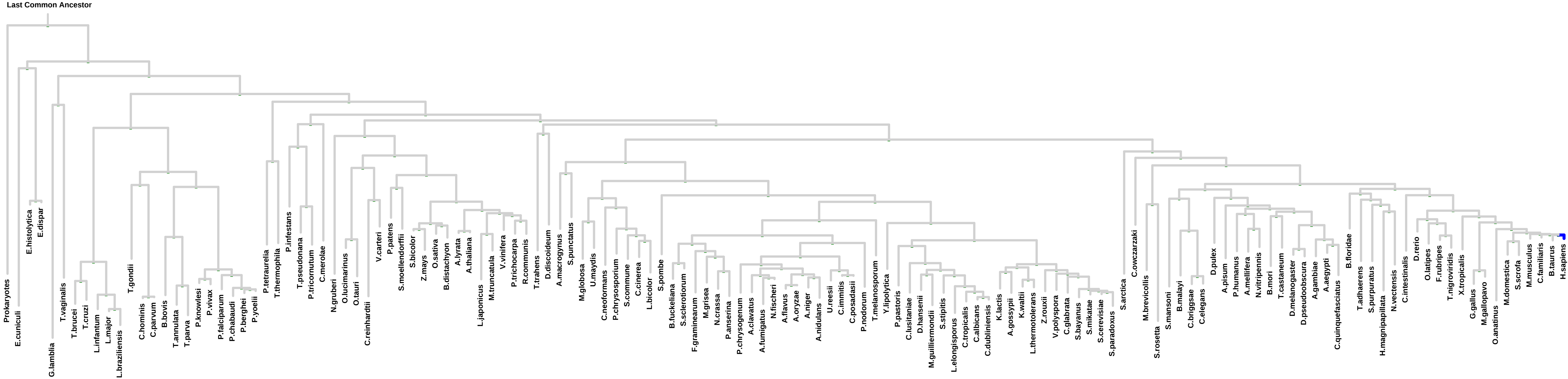
Num of ECM Genes: 1. Num of Predicted Genes: 2



1: BBSome || 2: cilium membrane || 3: cilium part || 4: microtubule basal body || 5: photoreceptor connecting cilium || 6: primary cilium || 7: cilium axoneme

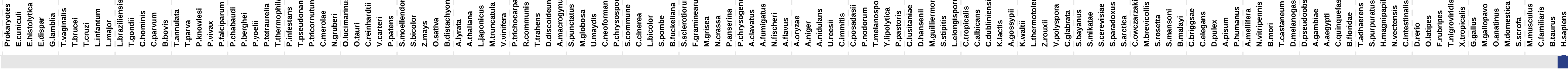
ECM 5, Gene set "BBSome", Page 1

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



PG

Protein



1: BBSome || 2: cilium

LLR

Notes