

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

Dataset:

Num of genes in input gene set: 3
Total number of genes: 20834
Prediction LLR threshold: 0

The CLIME PDF output two sections:

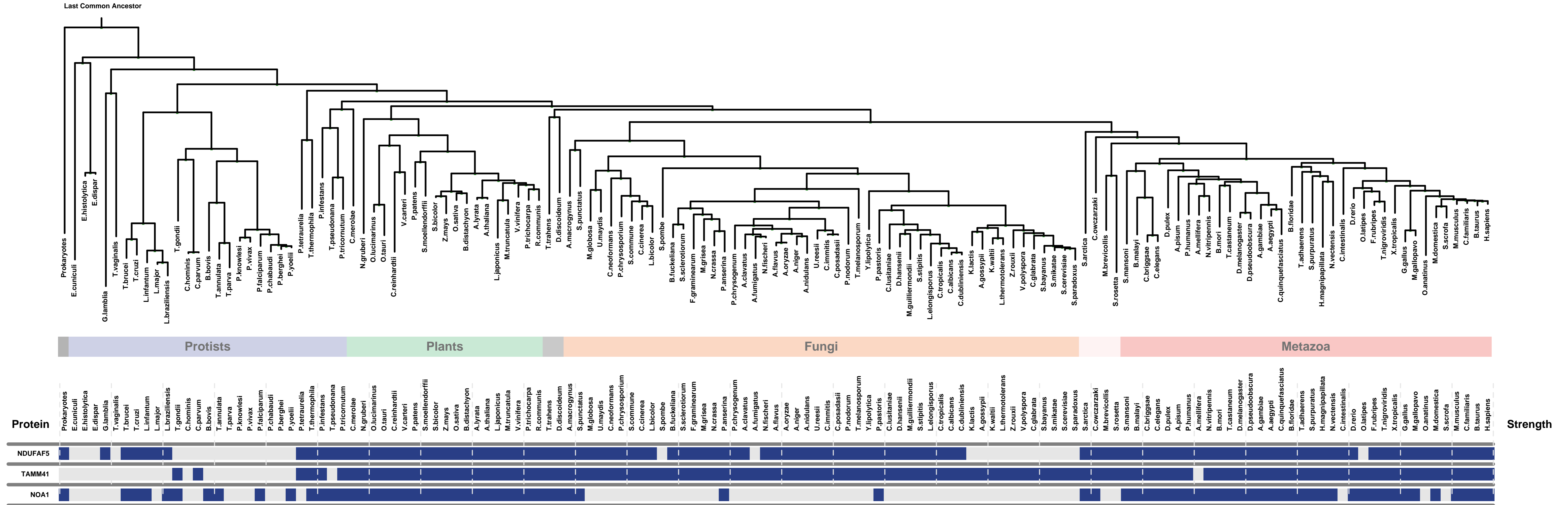
1) Overview of Evolutionarily Conserved Modules (ECMs)

- 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+

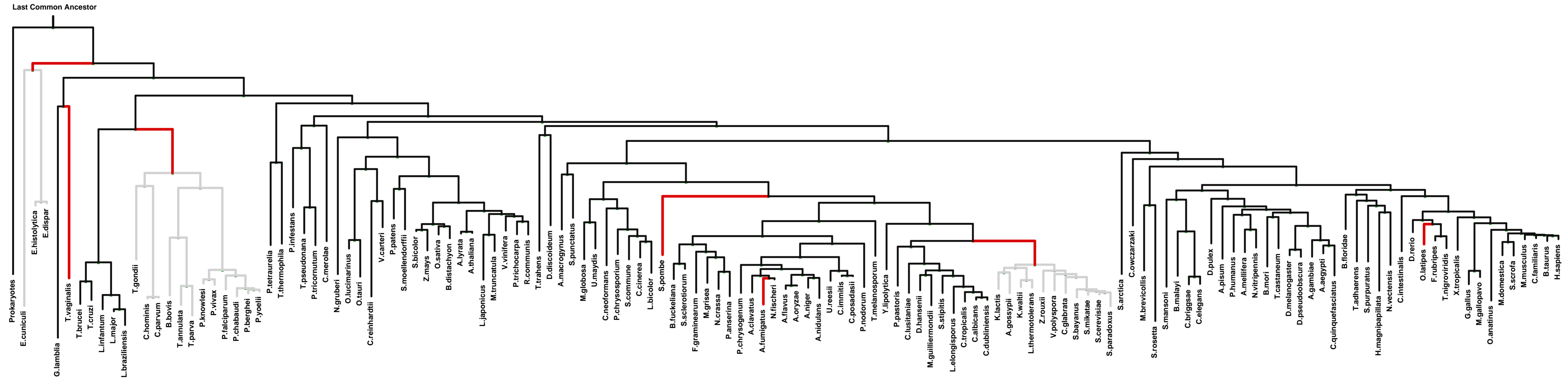
- Top panel shows the inferred evolutionary history on the predefined species tree. Branch color shows the gain event (blue) and loss events (red color, with brighter color indicating higher confidence in loss). Branches before the gain or after a loss are shown in gray.
- Bottom panel shows the input 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 "extrinsic to mitochondrial inner membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 39

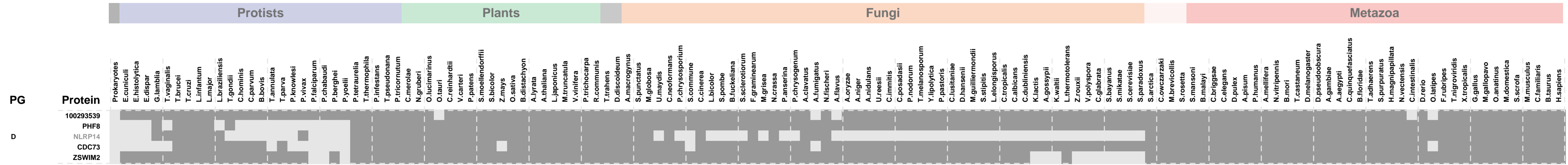
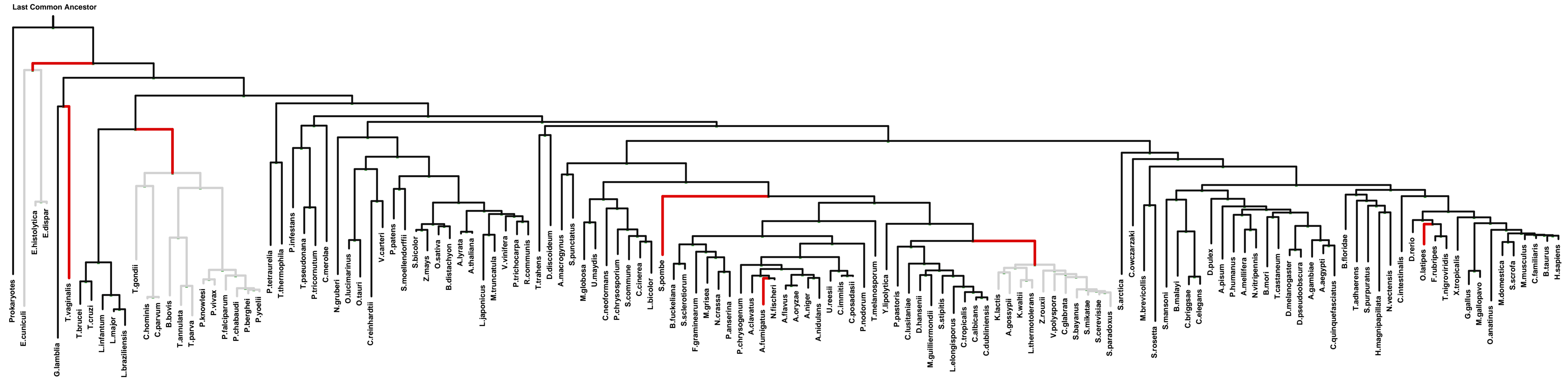


PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
	NDUFA5						12.0	1
A	NDUFA7						11.2	2/3
	GAD1						11.1	4/5
	NDUFA9						9.7	6
	SCGN						8.7	
A	GADL1						5.9	4
B	ACADL						5.8	4
B	IVD						5.7	7
C	PRKAG3						5.3	
	MTHFD1L						5.2	8
A	HDC						5.2	9/10
A	DDC						4.3	5
	NDUFV2						3.9	11
B	ACADVL						3.9	
B	ACAD10						3.6	12/13/14/15/16
D	RANGAP1						3.2	
	NDUFA6						3.1	
E	CNNM4						3.1	
E	CNNM1						3.1	
E	CNNM2						3.1	17
E	CNNM3						3.1	
	EC1						3.1	
	NDUFS7						3.0	5
C	PRKAG2						2.8	7
C	PRKAG1						2.8	7
A	GAD2						2.4	2/9/18/19/20
B	ACADM						2.0	4/9
	JMJD4						1.9	
B	ACAD9						1.7	8
B	ACADS						1.7	
B	ACADSB						1.7	
	NDUFV1						1.2	5
	LACTB2						1.2	
	CHAC2						1.2	
	AADAT						0.7	

1: extrinsic to mitochondrial inner membrane || 2: clathrin-sculpted gamma-aminobutyric acid transport vesicle membrane || 3: vesicle membrane || 4: mitochondrial membrane || 5: mitochondrial respiratory chain complex I || 6: transport vesicle membrane || 7: AMP-activated protein kinase complex || 8: dendrite || 9: axon || 10: synaptic vesicle || 11: mitochondrial nucleoid || 12: condensed chromosome kinetochore || 13: kinetochore || 14: nuclear membrane || 15: nuclear pore || 16: spindle pole || 17: basolateral plasma membrane || 18: anchored to membrane || 19: presynaptic membrane || 20: synaptic vesicle membrane

ECM 1, Gene set "extrinsic to mitochondrial inner membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 39



1: Cdc73/Paf1 complex

LLR Notes
 0.4
 0.2
 0.1
 0.0
 1

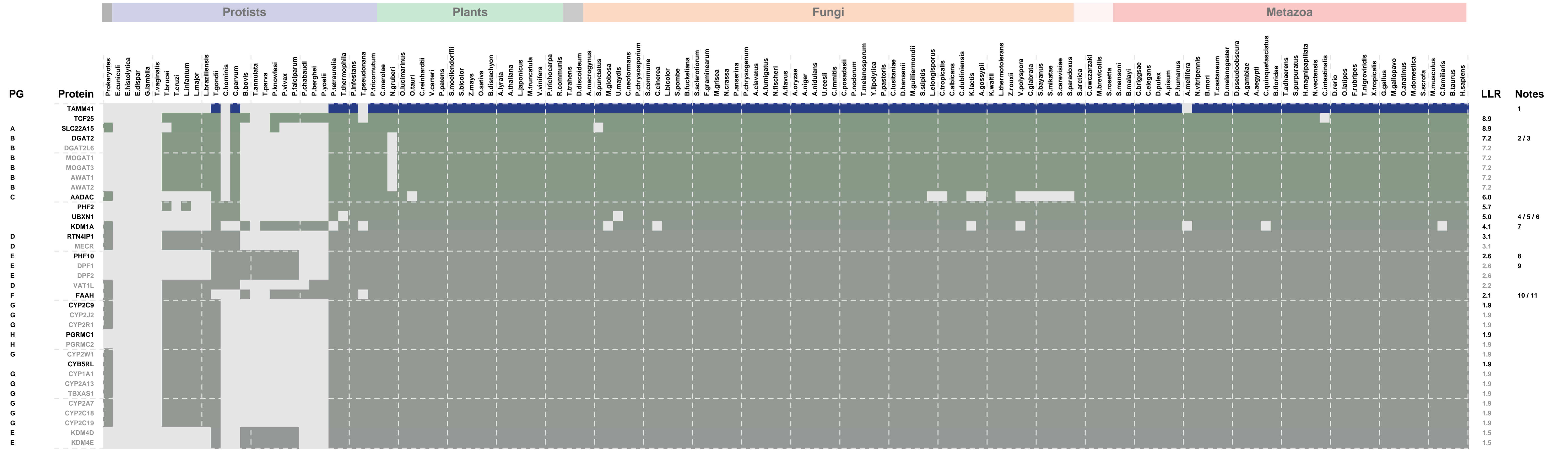
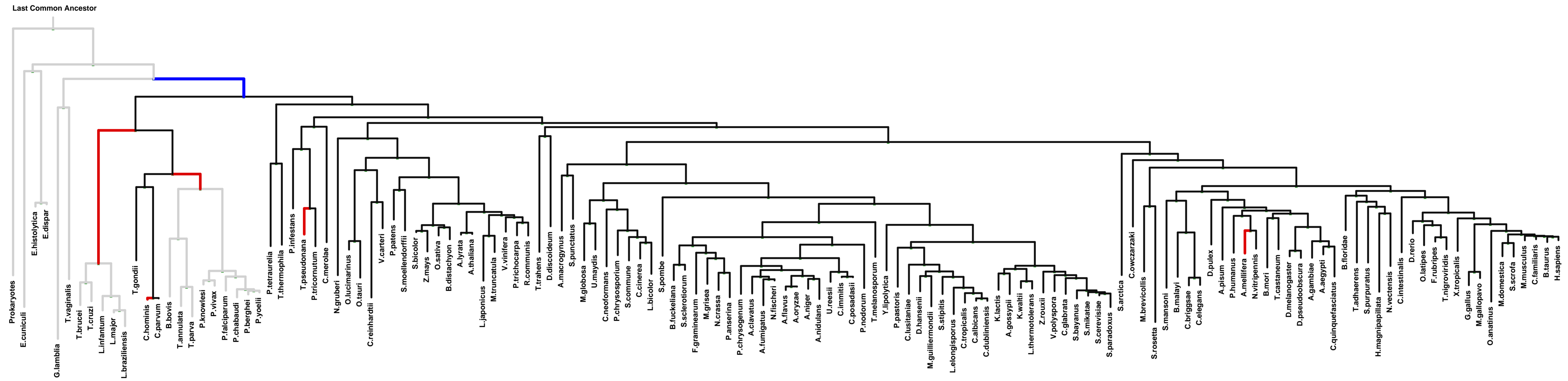
ECM 2, Gene set "extrinsic to mitochondrial inner membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 44

PRESENCE ——— ABSENCE ———
GAIN ——— LOSS ———

Log-likelihood Ratio Scale

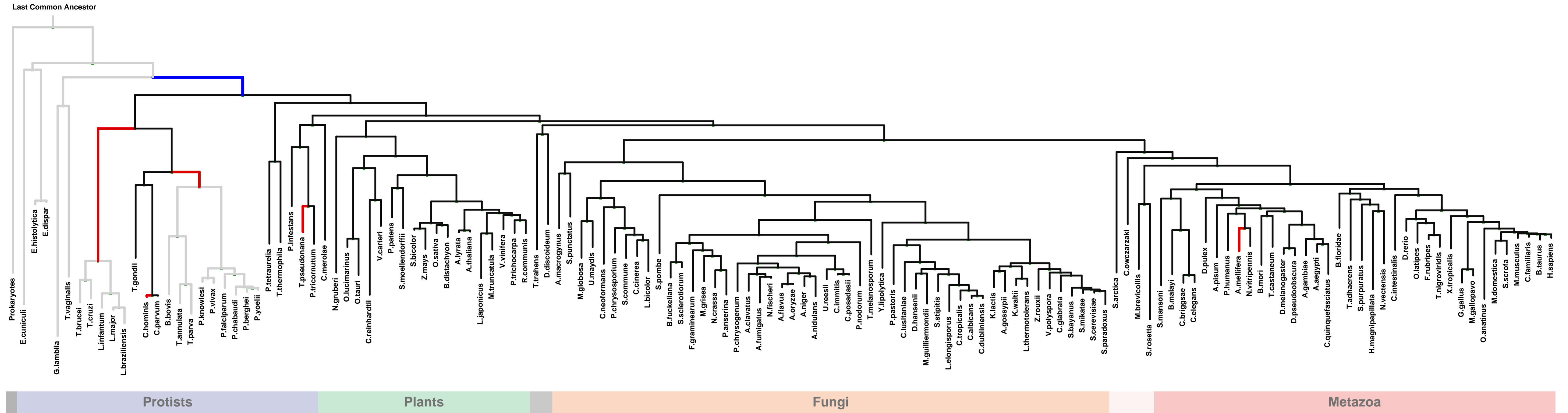
0 10 20 30 40 50 60



1: extrinsic to mitochondrial inner membrane || 2: integral to endoplasmic reticulum membrane || 3: lipid particle || 4: Cdc48p-Npl4p-Ufd1p AAA ATPase complex || 5: dendrite || 6: proteasome complex || 7: nuclear chromatin || 8: npBAF complex || 9: nBAF complex || 10: endomembrane system || 11: organelle membrane

ECM 2, Gene set "extrinsic to mitochondrial inner membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 44

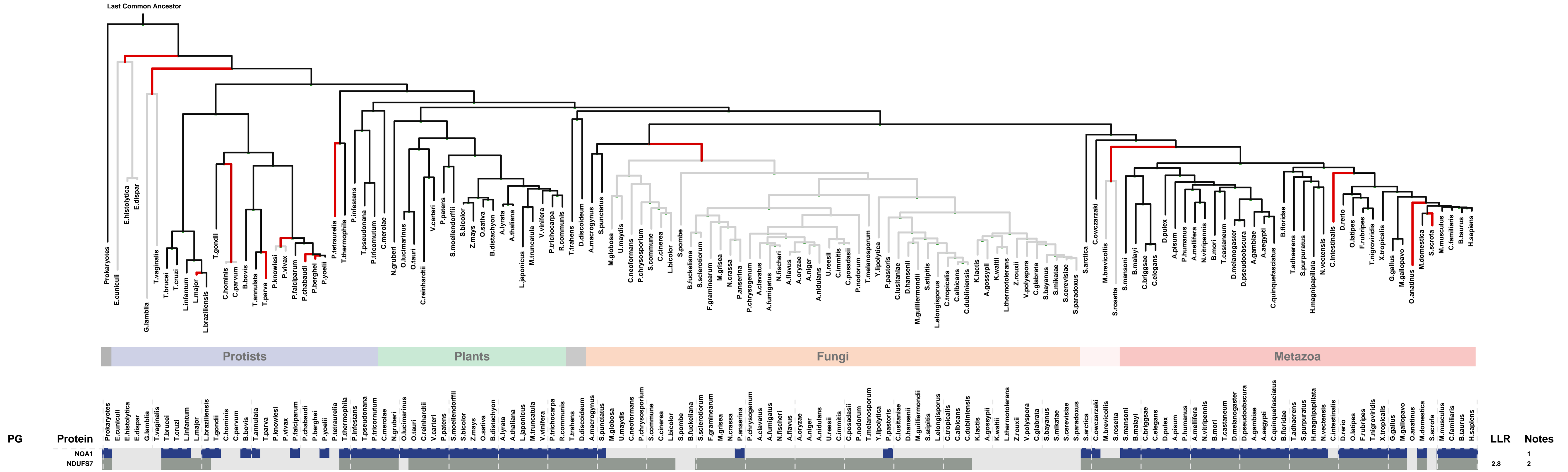


PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
E	KDM5C						1.5	
E	JARID2						1.5	1/2
F	FAAH2						1.3	
I	BTF3L4						1.2	
I	LYPLA2						1.2	
I	LYPLA1						1.2	
C	LYPLA1						1.2	
A	AADACL2						0.8	
A	SLC22A10						0.6	
E	RSF1						0.3	3

1: ESC/E(Z) complex || 2: histone methyltransferase complex || 3: RSF complex

ECM 3, Gene set "extrinsic to mitochondrial inner membrane", Page 1

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



PG	Protein	LLR	Notes
	NOA1	1	1
	NDUFS7	2.8	2

1: extrinsic to mitochondrial inner membrane || 2: mitochondrial respiratory chain complex I