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

Dataset:

Num of genes in input gene set: 30
Total number of genes: 20834
Prediction LLR threshold: 0

The CLIME PDF output two sections:

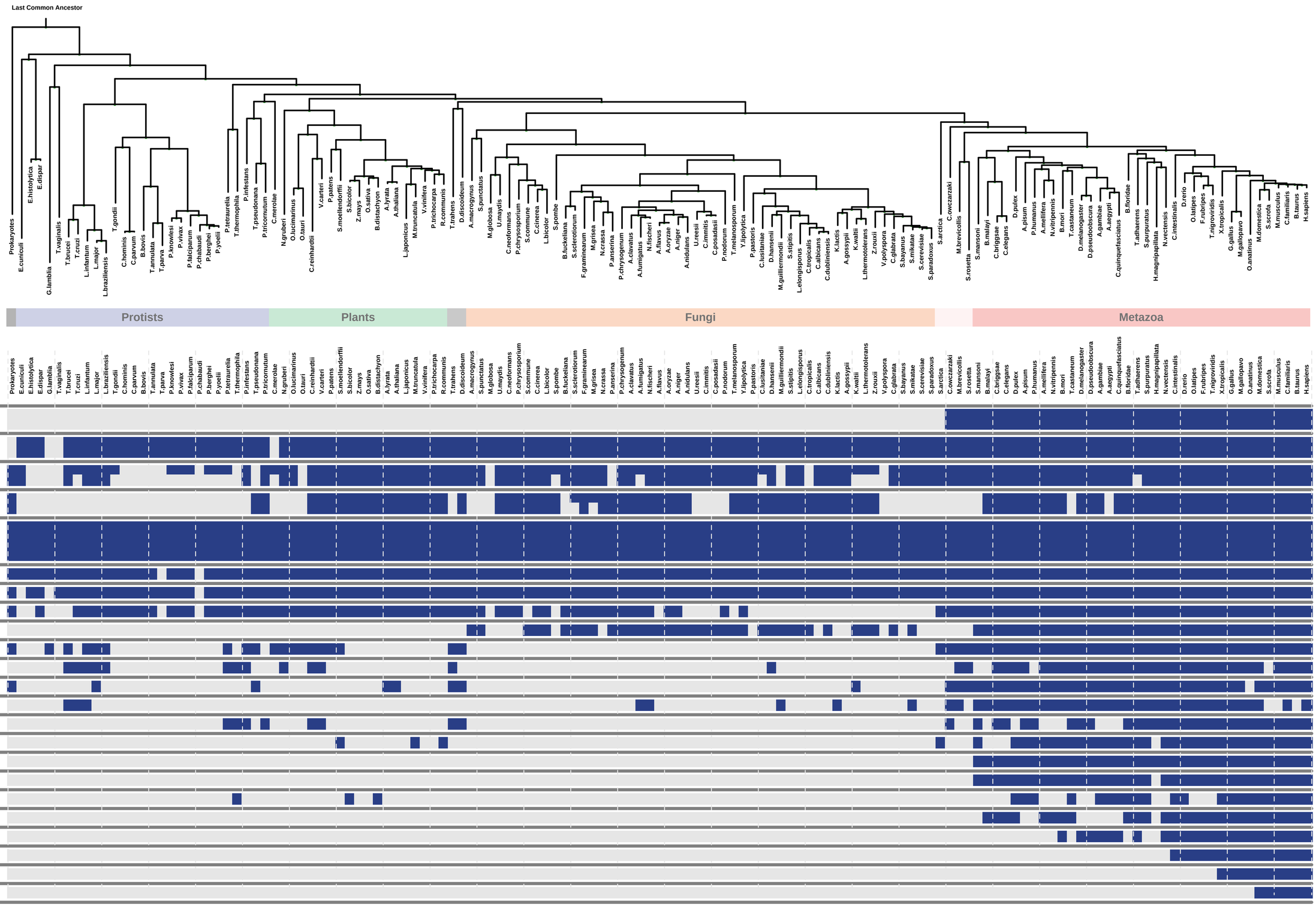
1) Overview of Evolutionarily Conserved Modules (ECMs)

- 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+

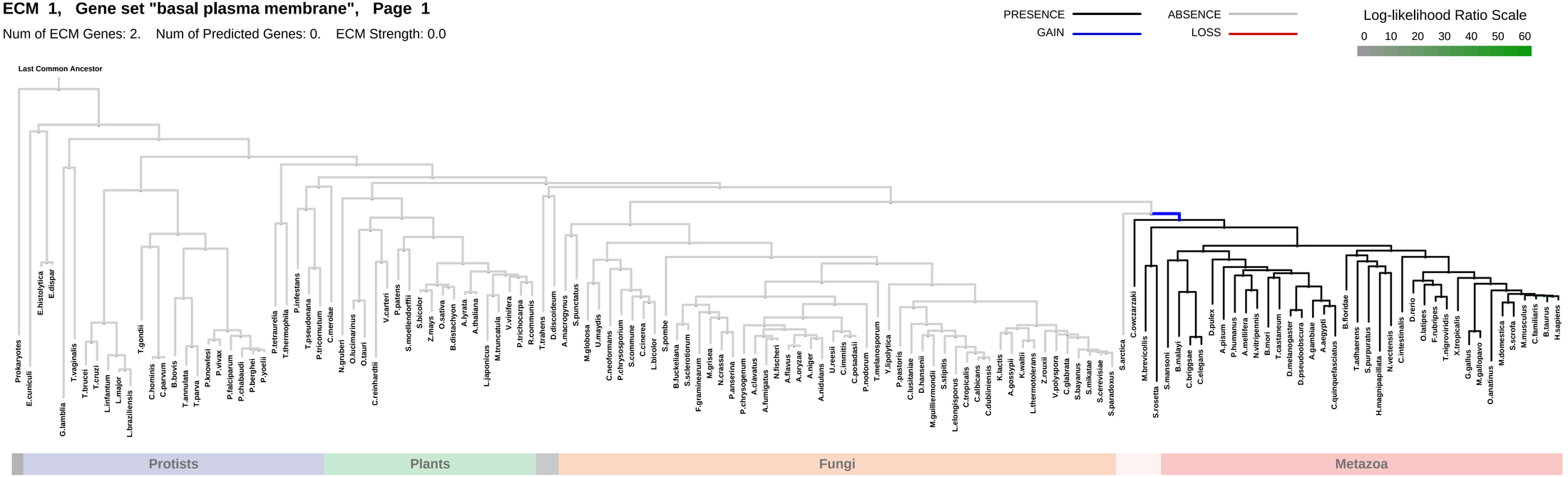
- Top panel shows the inferred evolutionary history on the predefined species tree. Branch color shows the gain event (blue) and loss events (red color, with brighter color indicating higher confidence in loss). Branches before the gain or after a loss are shown in gray.
- Bottom panel shows the input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

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

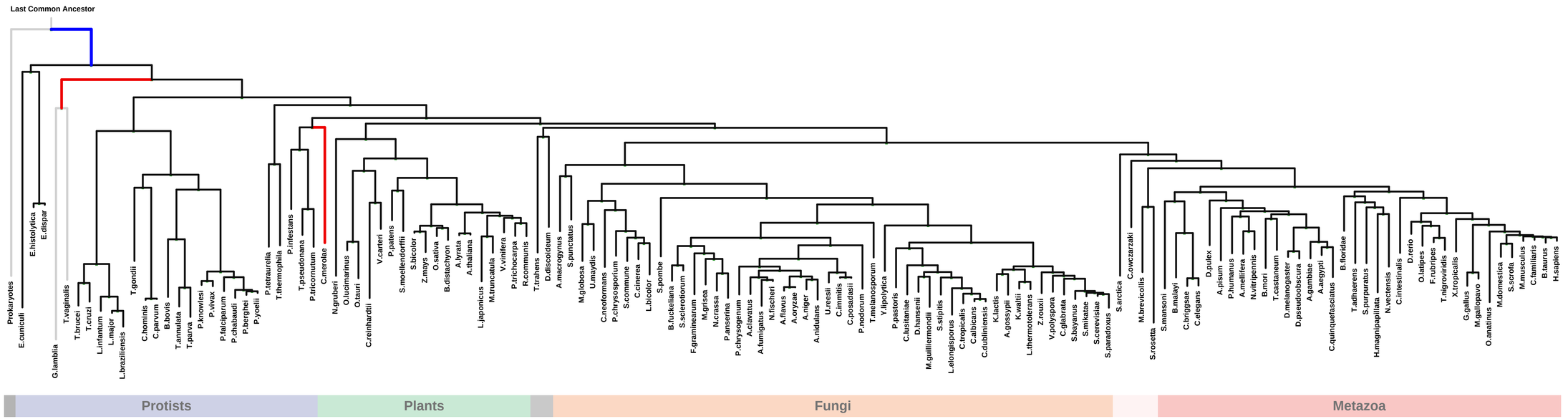


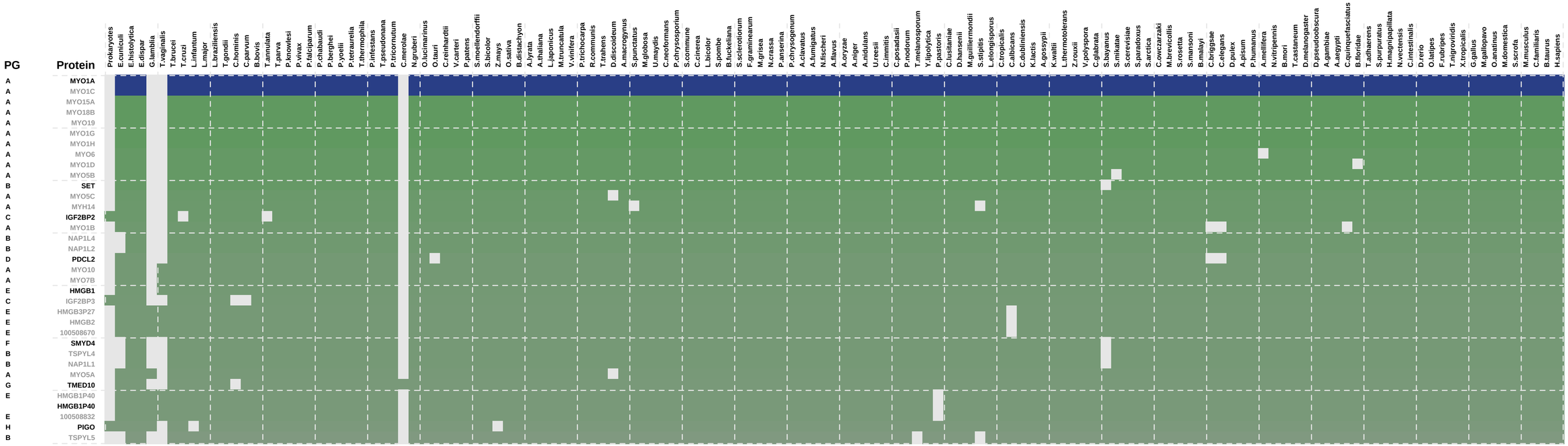
PG	Protein	LLR	Notes
	LDLRAP1		1 / 2 / 3 / 4 / 5 / 6 / 7 / 8
	SHROOM4		4 / 6 / 9 / 10 / 11 / 12 / 13

1: AP-1 adaptor complex || 2: AP-2 adaptor complex || 3: axon || 4: basal plasma membrane || 5: early endosome || 6: internal side of plasma membrane || 7: neurofilament || 8: recycling endosome || 9: actin cytoskeleton ||
10: cortical actin cytoskeleton || 11: filamentous actin || 12: myosin II complex || 13: stress fiber

ECM 2, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

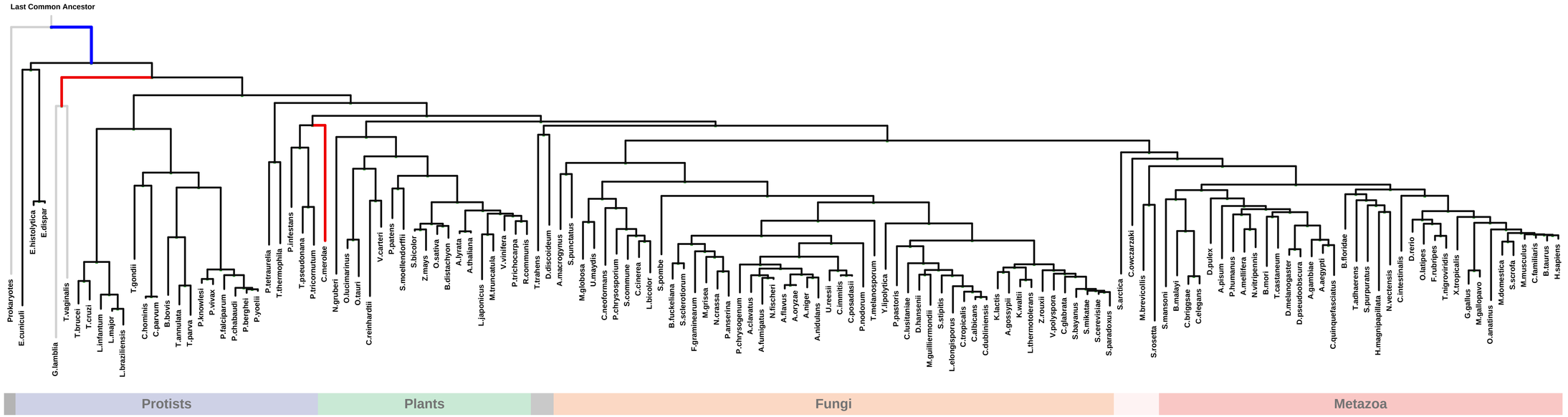


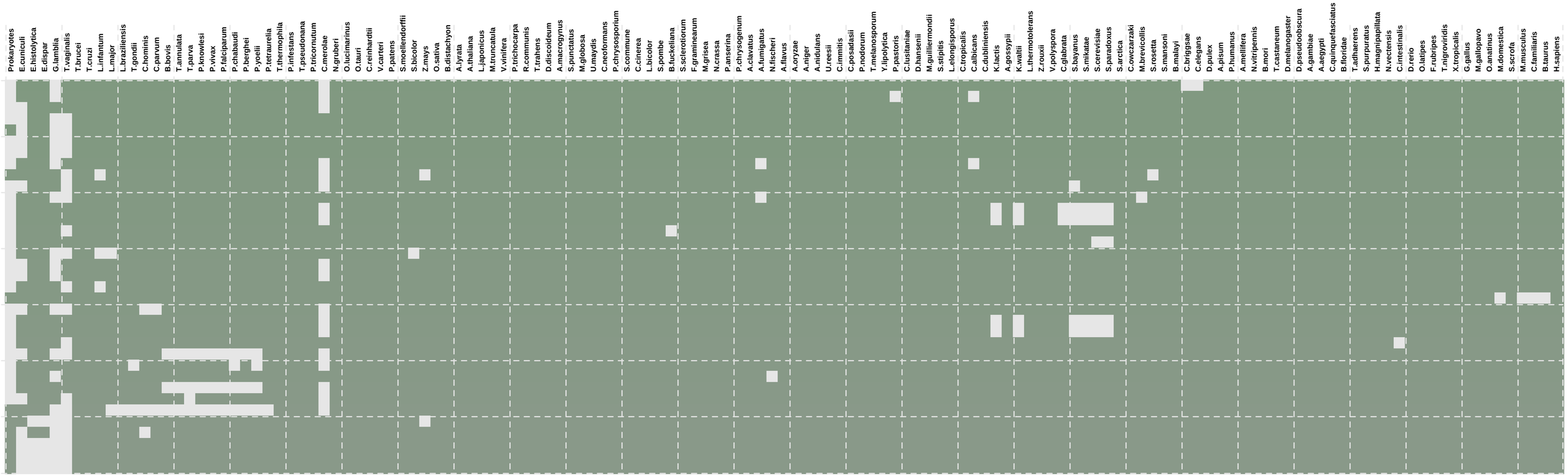


1: basal plasma membrane || 2: basolateral plasma membrane || 3: brush border || 4: cortical actin cytoskeleton || 5: filamentous actin || 6: lateral plasma membrane || 7: microvillus || 8: myosin complex || 9: nuclear pore ||
10: stereocilium membrane || 11: stress fiber || 12: unconventional myosin complex || 13: stereocilium || 14: sarcomere || 15: mitochondrial outer membrane || 16: apical part of cell || 17: axon || 18: cell cortex || 19: clathrin-coated endocytic vesicle ||
20: clathrin-coated vesicle membrane || 21: coated pit || 22: cytoplasmic membrane-bounded vesicle || 23: DNA-directed RNA polymerase II, holoenzyme || 24: endocytic vesicle || 25: nuclear membrane || 26: ruffle || 27: ruffle membrane ||

ECM 2, Gene set "basal plasma membrane", Page 2

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

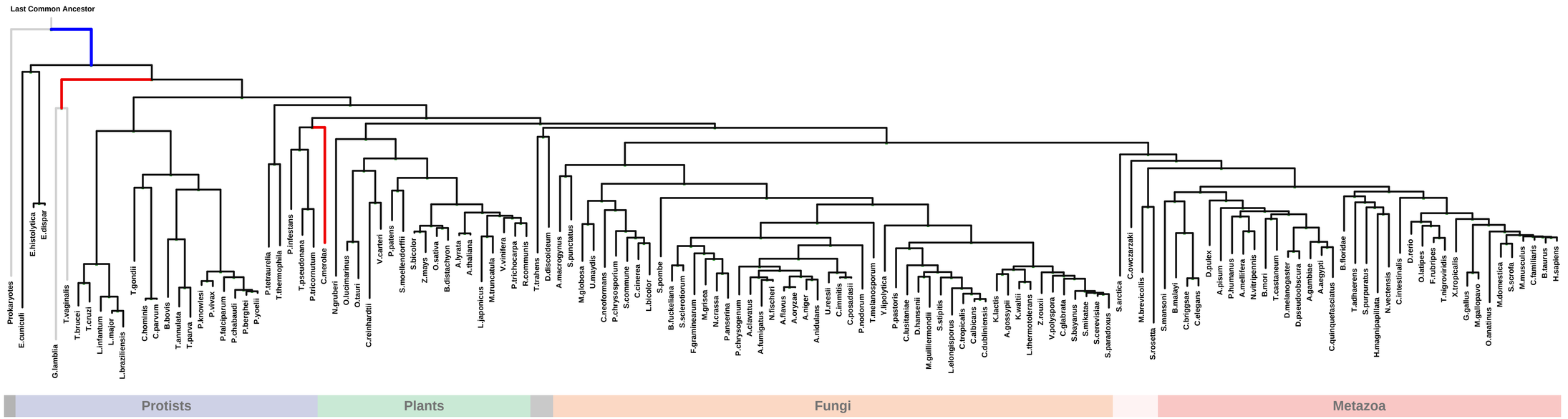


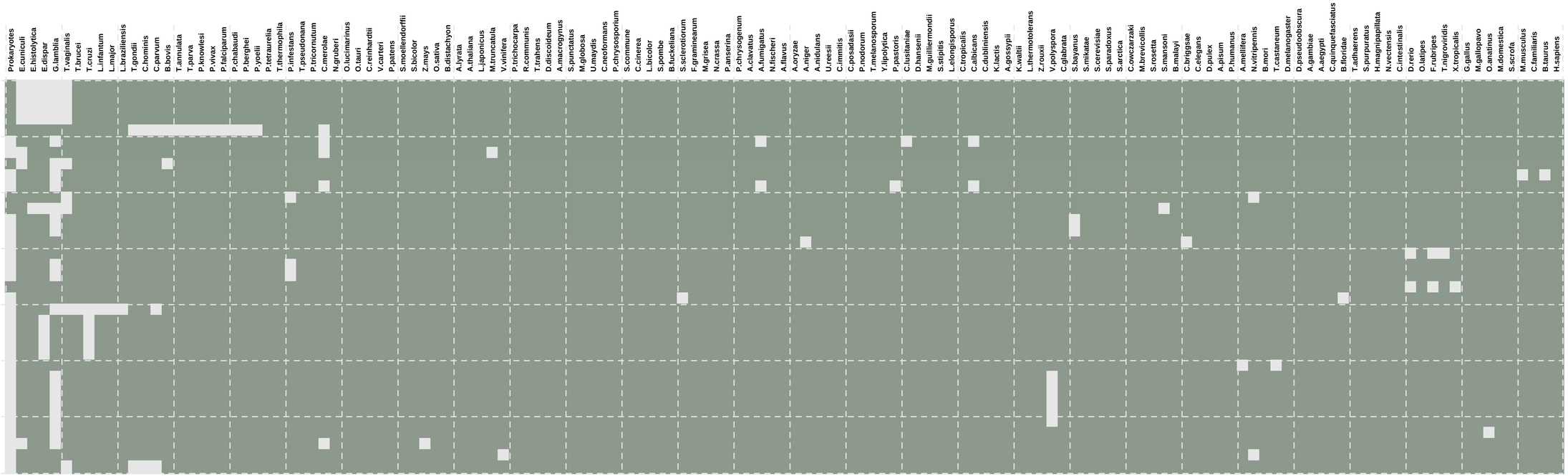


1: cell cortex || 2: lysosomal membrane || 3: melanosome || 4: myosin complex || 5: photoreceptor connecting cilium || 6: photoreceptor inner segment || 7: photoreceptor outer segment || 8: stereocilium || 9: synapse ||
10: chromosome || 11: nuclear pore || 12: eukaryotic translation initiation factor 4F complex || 13: Cajal body || 14: catalytic step 2 spliceosome || 15: nuclear speck || 16: spliceosomal complex || 17: cytoplasmic mRNA processing body ||
18: ribonucleoprotein complex || 19: SCF ubiquitin ligase complex || 20: Ada2/Gcn5/Ada3 transcription activator complex || 21: myofibril || 22: T-tubule || 23: Z disc || 24: endosome || 25: U5 snRNP || 26: U12-type spliceosomal complex ||

ECM 2, Gene set "basal plasma membrane", Page 3

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

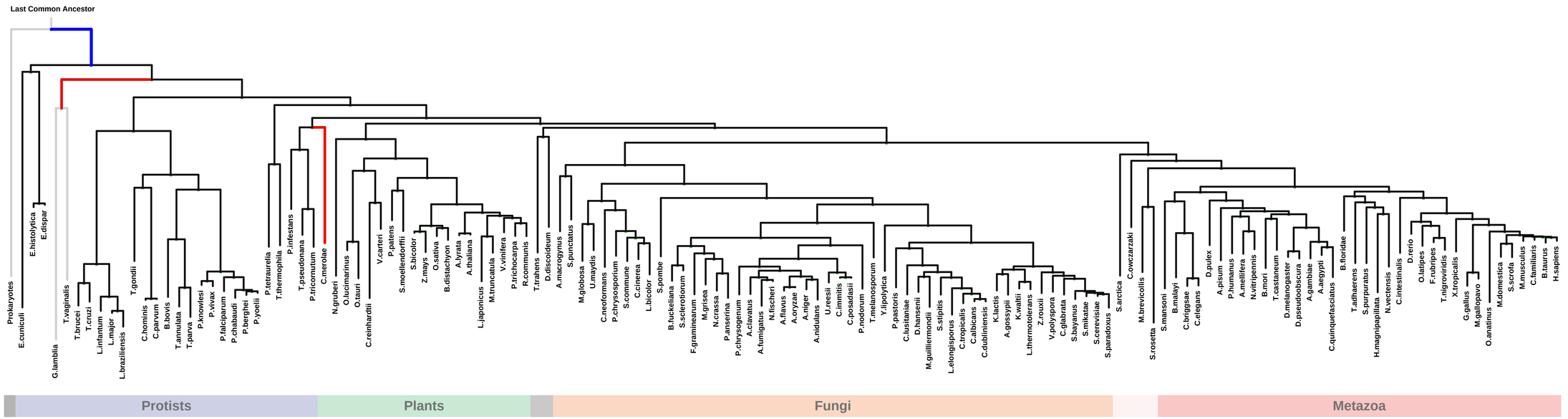


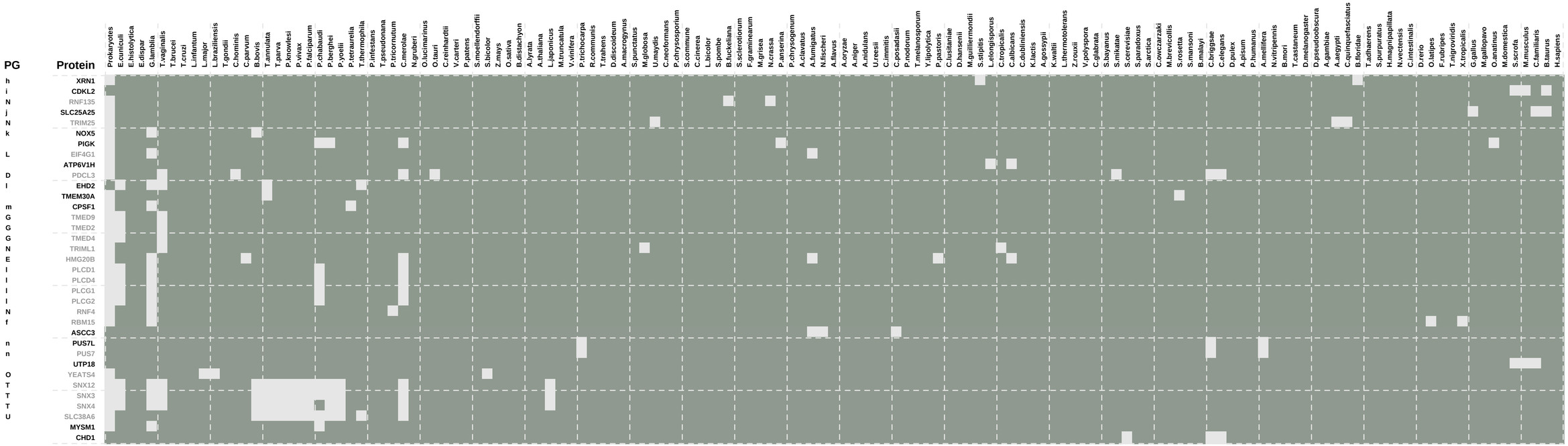


1: mitochondrial nucleoid || 2: chromosome || 3: HOPS complex || 4: late endosome || 5: late endosome membrane || 6: lysosomal membrane || 7: lysosome || 8: platelet alpha granule || 9: peroxisomal matrix || 10: peroxisomal membrane || 11: peroxisome || 12: glycosylphosphatidylinositol-N-acetylglucosaminyltransferase (GPI-GnT) complex || 13: endosome membrane || 14: presynaptic membrane || 15: endosome || 16: synaptic vesicle membrane || 17: proteasome complex || 18: transcription factor TFIID complex || 19: nuclear heterochromatin || 20: early endosome || 21: stress fiber || 22: mitotic spindle || 23: ruffle membrane || 24: transcriptional repressor complex || 25: catalytic step 2 spliceosome ||

ECM 2, Gene set "basal plasma membrane", Page 4

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

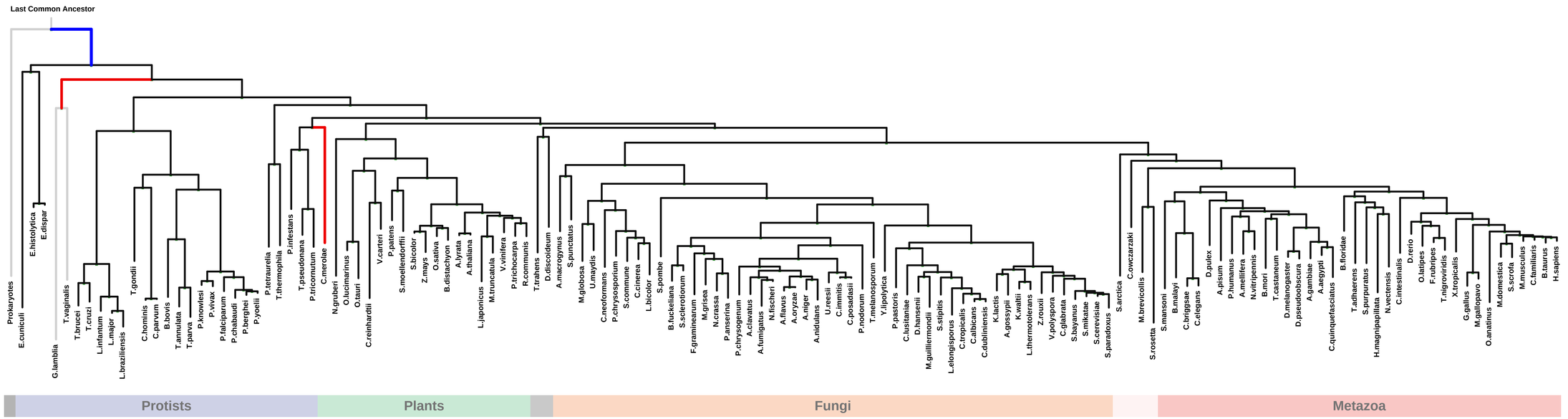


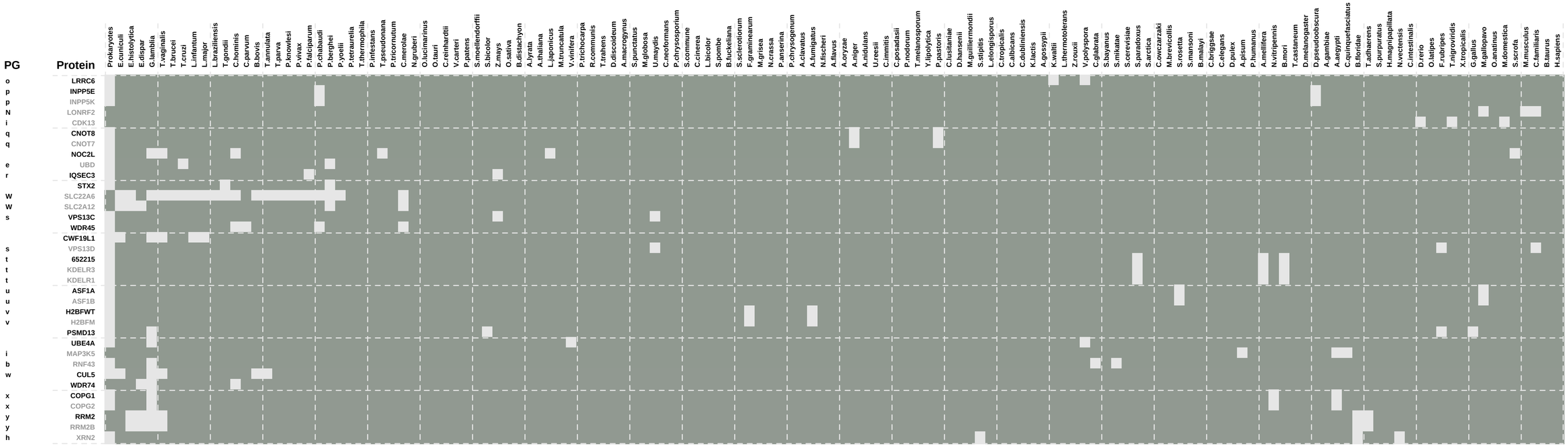


1: intermediate filament cytoskeleton || 2: GPI-anchor transamidase complex || 3: integral to endoplasmic reticulum membrane || 4: eukaryotic translation initiation factor 4F complex || 5: vacuolar proton-transporting V-type ATPase, V1 domain ||
6: endosome membrane || 7: recycling endosome membrane || 8: mRNA cleavage and polyadenylation specificity factor complex || 9: endoplasmic reticulum-Golgi intermediate compartment || 10: endoplasmic reticulum-Golgi intermediate compartment membrane ||
11: trans-Golgi network transport vesicle || 12: COPI-coated vesicle || 13: COPI-coated vesicle membrane || 14: Golgi cisterna membrane || 15: zymogen granule membrane || 16: chromosome || 17: lamellipodium || 18: neuron projection ||

ECM 2, Gene set "basal plasma membrane", Page 5

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

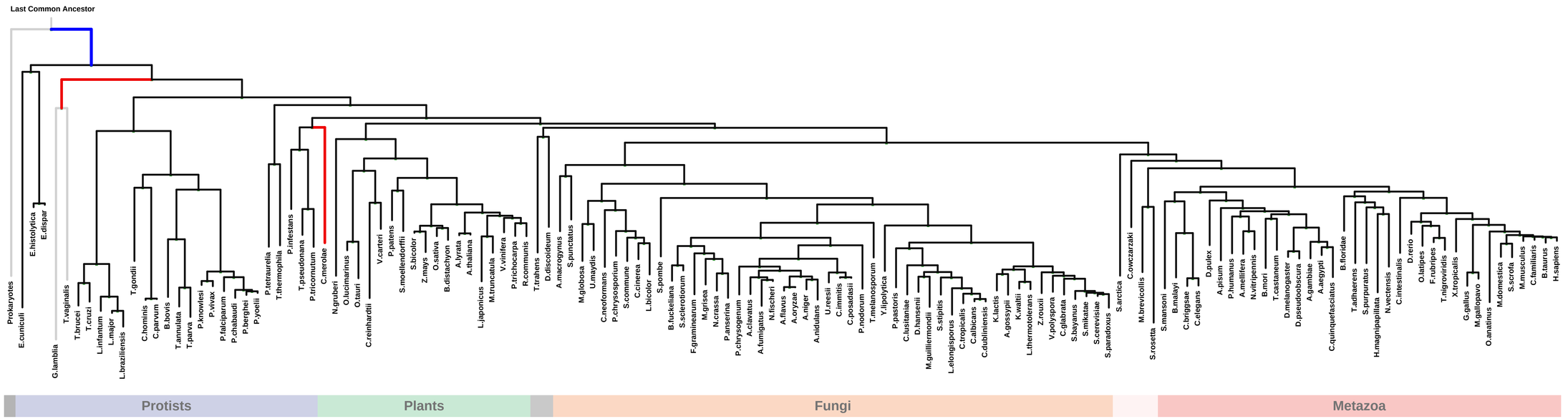




1: cilium || 2: cilium axoneme || 3: Golgi cisterna membrane || 4: neuron projection || 5: ruffle || 6: ruffle membrane || 7: trans-Golgi network || 8: nuclear cyclin-dependent protein kinase holoenzyme complex || 9: nuclear speck ||
10: CCR4-NOT complex || 11: cytoplasmic mRNA processing body || 12: chromatin assembly complex || 13: aggresome || 14: inhibitory synapse || 15: postsynaptic membrane || 16: basolateral plasma membrane || 17: cell-cell junction ||
18: membrane raft || 19: midbody || 20: transport vesicle || 21: caveola || 22: endomembrane system || 23: cis-Golgi network || 24: endoplasmic reticulum-Golgi intermediate compartment || 25: chromatin remodeling complex ||

ECM 2, Gene set "basal plasma membrane", Page 6

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

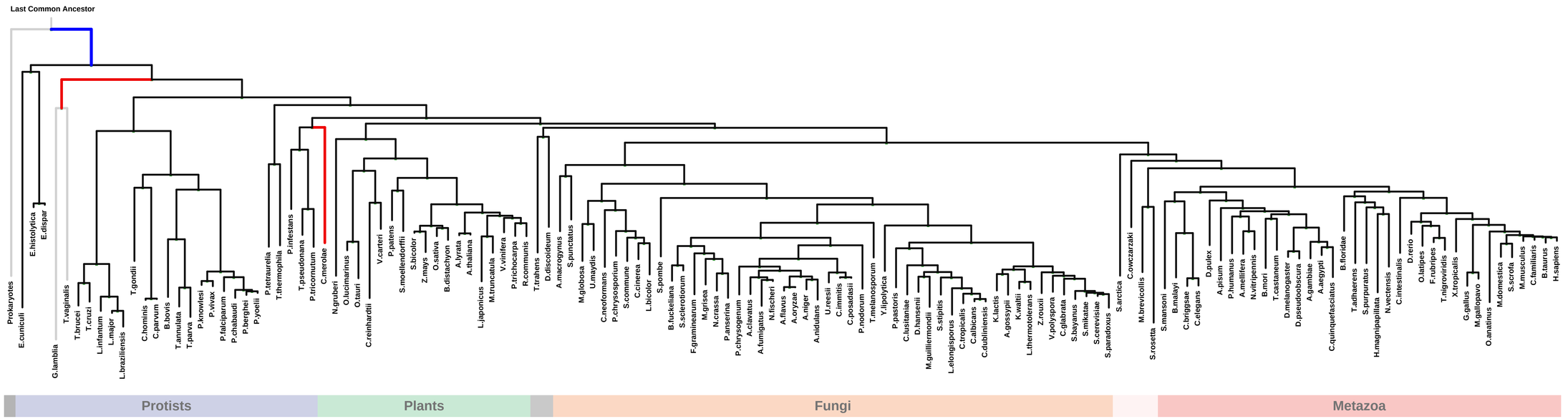


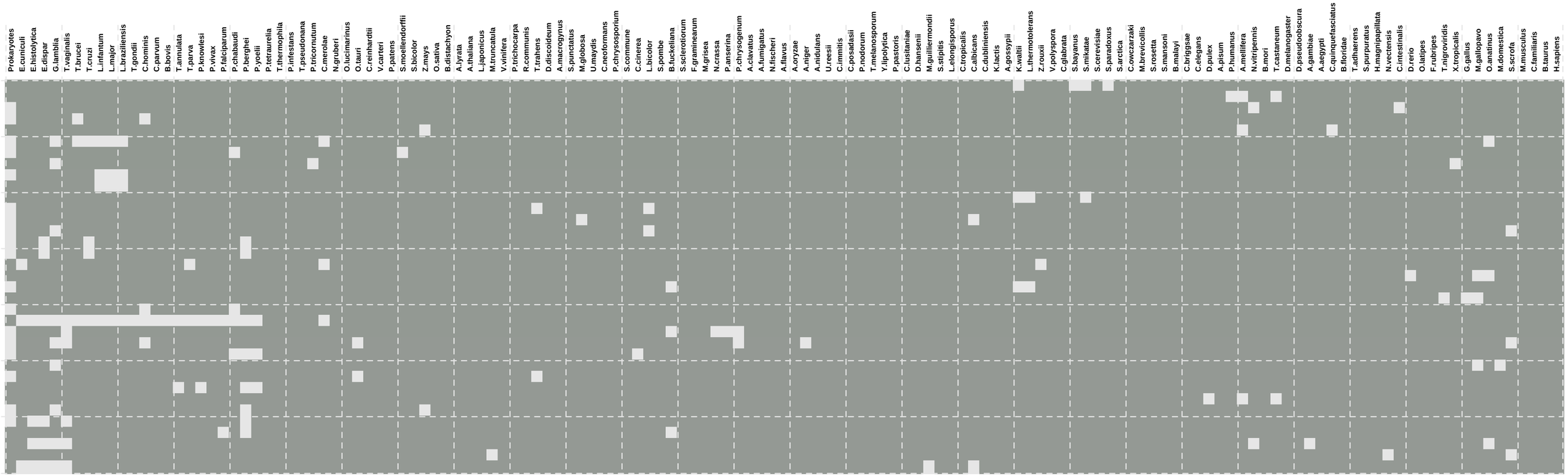
PG	Protein	LLR	Notes
k	DGKA	3.6	
w	CUL2	3.6	1
w	CUL4A	3.6	2 / 3
r	PSD3	3.5	4 / 5 / 6
N	LNX2	3.5	
a	GLRX5	3.5	
z	**RABEPK**	**3.5**	7 / 8
N	TRIM5	3.5	9
	EMC3	**3.5**	10
C	IGF2BP1	3.4	11 / 12 / 13 / 14 / 15
z	KLHL9	3.4	16 / 17
{	**IPO7**	**3.4**	18
P	CAPN1	3.4	
s	VPS13B	3.4	
A	MYH15	3.4	19 / 20
	PFKL	**3.4**	21
N	TRIM4	3.3	
	PGS1	**3.3**	
W	SLC22A2	3.3	
|	**ATR**	**3.3**	22 / 23 / 24
r	ARFGEF1	3.3	6 / 25 / 26
r	ARFGEF2	3.3	6 / 13 / 27 / 28 / 29 / 30 / 3
	RNF113A	**3.3**	
	LSM2	**3.3**	34
c	ATAD2B	3.2	
W	SLC2A13	3.2	
	PIK3C2B	**3.2**	35
	SREK1	**3.2**	36
	PSMD4	**3.1**	37 / 38
V	LRRC30	3.1	
}	**ISG20L2**	**3.1**	
	WDR34	**3.1**	
}	LOC81691	3.1	
	SPAG6	**3.1**	39 / 40 / 41 / 42
N	PDZRN4	3.1	

1: Cul2-RING ubiquitin ligase complex || 2: Cul4A-RING ubiquitin ligase complex || 3: Cul4-RING ubiquitin ligase complex || 4: postsynaptic density || 5: postsynaptic membrane || 6: trans-Golgi network || 7: endosome || 8: endosome membrane ||
9: cytoplasmic mRNA processing body || 10: ER membrane protein complex || 11: CRD-mediated mRNA stability complex || 12: cytoplasmic stress granule || 13: dendritic spine || 14: lamellipodium || 15: ribonucleoprotein complex ||
16: Cul3-RING ubiquitin ligase complex || 17: midbody || 18: nuclear pore || 19: myofibril || 20: myosin filament || 21: 6-phosphofructokinase complex || 22: chromosome || 23: PML body || 24: XY body || 25: nuclear matrix ||

ECM 2, Gene set "basal plasma membrane", Page 7

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

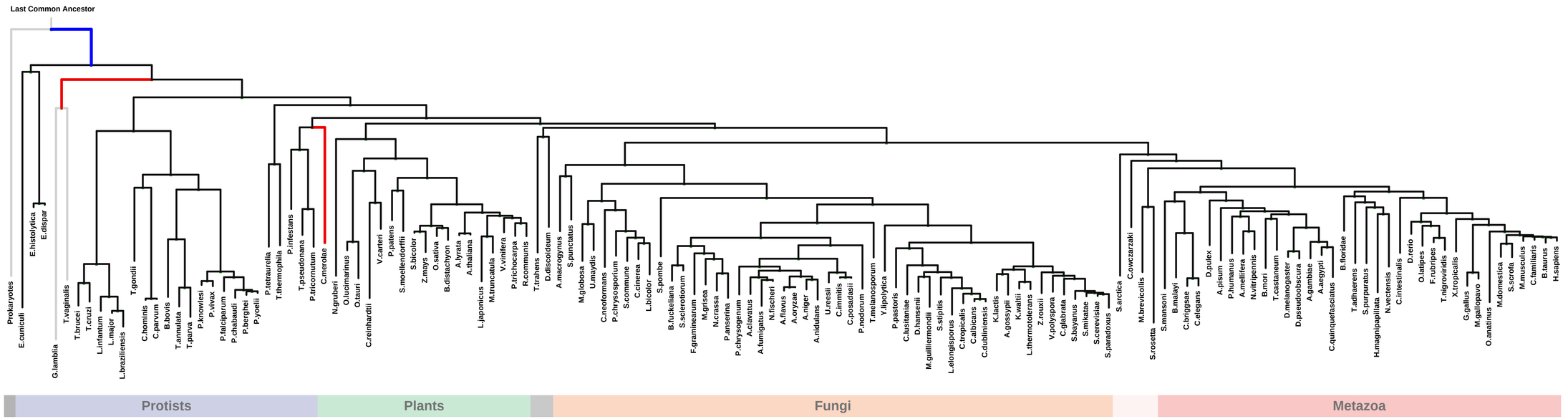


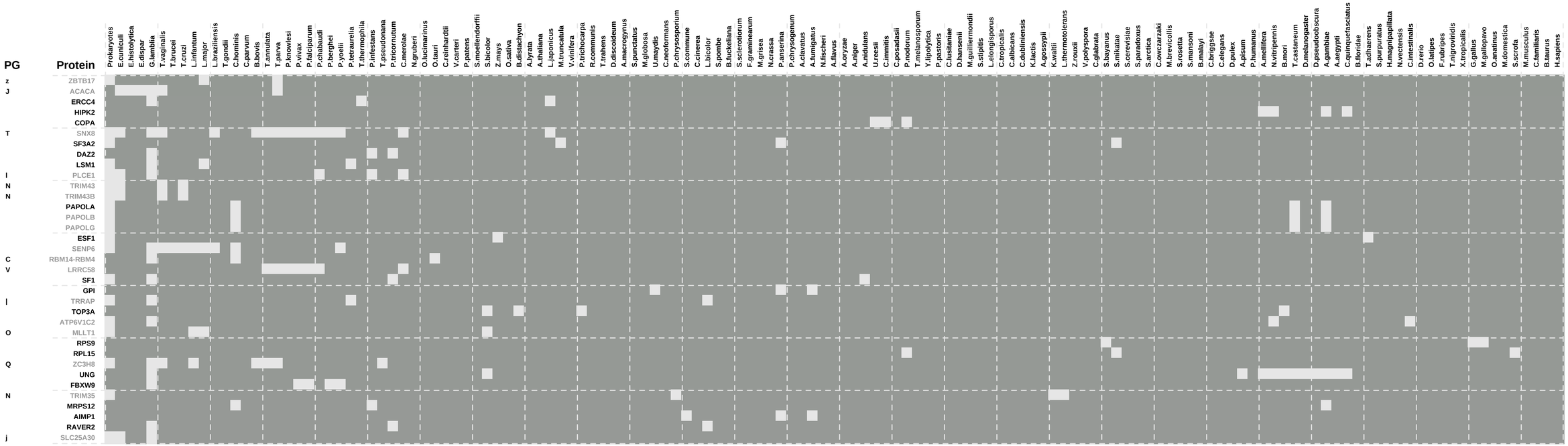


1: apical part of cell || 2: cytoplasmic vesicle || 3: proton-transporting two-sector ATPase complex || 4: proton-transporting V-type ATPase, V1 domain || 5: FHF complex || 6: HOPS complex || 7: ribonucleoprotein complex || 8: DNA-directed RNA polymerase III complex || 9: MLL1 complex || 10: MCM complex || 11: catalytic step 2 spliceosome || 12: nuclear speck || 13: spliceosomal complex || 14: clathrin adaptor complex || 15: COPI vesicle coat || 16: cytosolic small ribosomal subunit || 17: basolateral plasma membrane || 18: PcG protein complex || 19: nuclear pore || 20: histone acetyltransferase complex || 21: chromosome, telomeric region || 22: condensed nuclear chromosome || 23: Mre11 complex || 24: nuclear chromatin || 25: DNA replication factor C complex ||

ECM 2, Gene set "basal plasma membrane", Page 8

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6





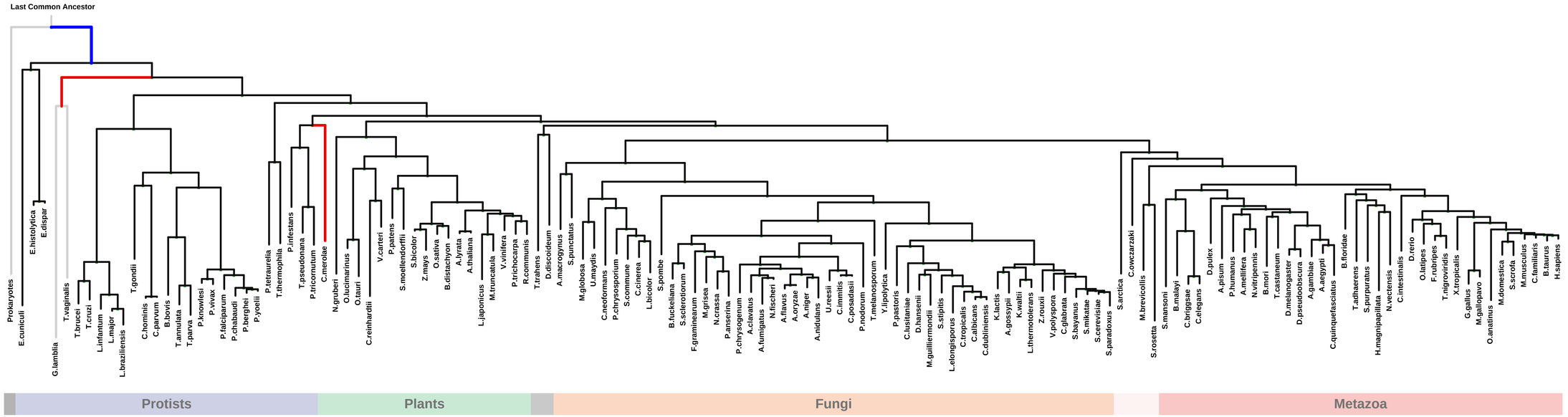
1: chromosome, telomeric region || 2: nuclear chromosome, telomeric region || 3: nucleotide-excision repair complex || 4: COPI vesicle coat || 5: early endosome membrane || 6: retromer complex || 7: catalytic step 2 spliceosome ||
8: small nuclear ribonucleoprotein complex || 9: spliceosomal complex || 10: ribonucleoprotein complex || 11: ribosome || 12: NuA4 histone acetyltransferase complex || 13: PCAF complex || 14: STAGA complex || 15: transcription factor TFTC complex ||
16: chromosome || 17: PML body || 18: proton-transporting V-type ATPase, V1 domain || 19: cytosolic small ribosomal subunit || 20: cytosolic large ribosomal subunit || 21: mitochondrial ribosome || 22: small ribosomal subunit ||

ECM 2, Gene set "basal plasma membrane", Page 9

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

PRESENCE ABSENCE
GAIN LOSS

Log-likelihood Ratio Scale
0 10 20 30 40 50 60

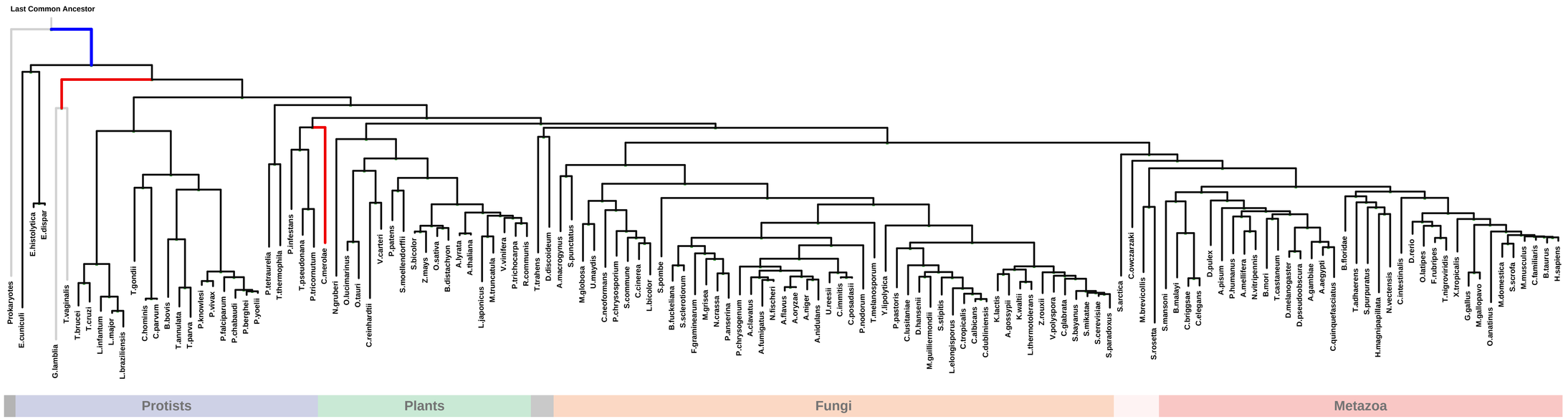


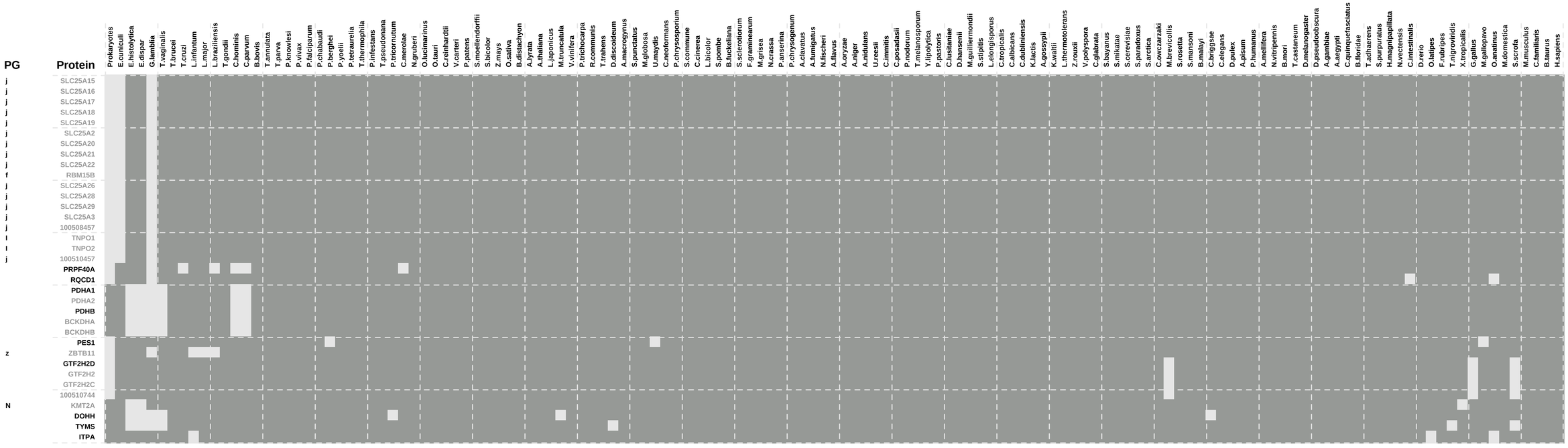
PG	Protein	LLR	Notes
j	SLC25A31	1.4	1 / 2
j	SLC25A32	1.4	
j	SLC25A33	1.4	
j	SLC25A34	1.4	
j	SLC25A36	1.4	
j	SLC25A37	1.4	
j	SLC25A38	1.4	
j	SLC25A39	1.4	
j	SLC25A4	1.4	3
j	SLC25A40	1.4	
j	SLC25A41	1.4	
j	SLC25A42	1.4	
j	SLC25A43	1.4	
j	SLC25A44	1.4	
j	SLC25A45	1.4	
j	SLC25A48	1.4	
j	SLC25A5	1.4	4 / 5
j	SLC25A6	1.4	6
	EIF3B	**1.4**	7
Z	DECR2	1.4	8
	PRMT8	**1.4**	
	CHMP2A	**1.4**	9
j	UCP1	1.4	
j	UCP2	1.4	
j	UCP3	1.4	
m	SF3B3	1.4	10 / 11 / 12 / 13
	CHKA	**1.4**	
I	ITSN2	1.4	
	EIF2A	1.4	14
j	SLC25A1	1.4	
j	SLC25A10	1.4	
j	SLC25A11	1.4	
j	SLC25A12	1.4	
j	SLC25A13	1.4	
j	SLC25A14	1.4	

1: cilium || 2: flagellum || 3: mitochondrial outer membrane || 4: mitochondrial nucleoid || 5: MMXD complex || 6: mitochondrial inner membrane presequence translocase complex || 7: eukaryotic translation initiation factor 3 complex ||
8: peroxisome || 9: late endosome membrane || 10: catalytic step 2 spliceosome || 11: small nuclear ribonucleoprotein complex || 12: spliceosomal complex || 13: U12-type spliceosomal complex || 14: eukaryotic translation initiation factor 2 complex

ECM 2, Gene set "basal plasma membrane", Page 10

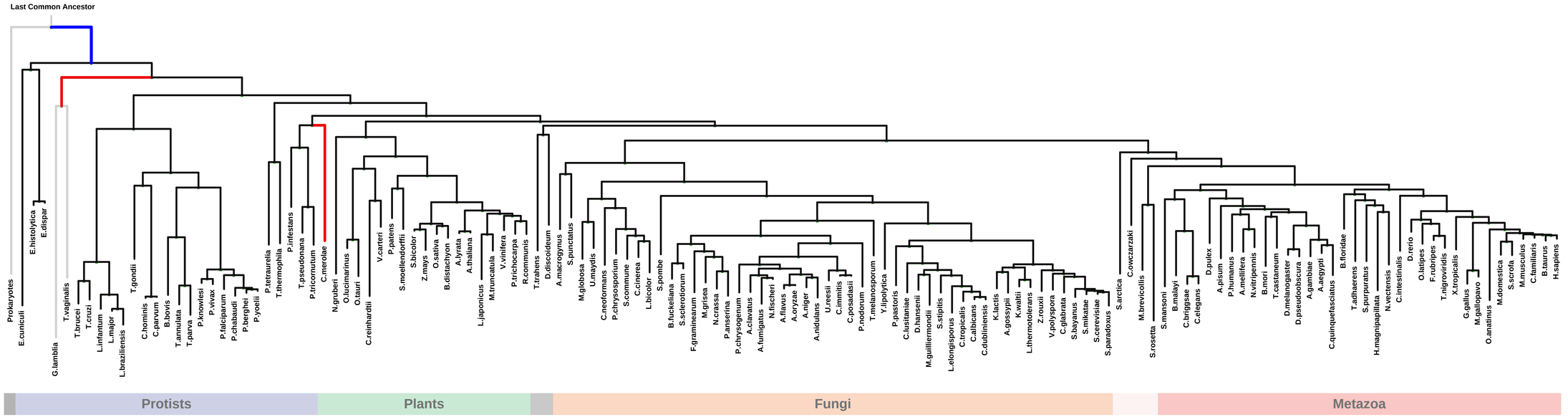
Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

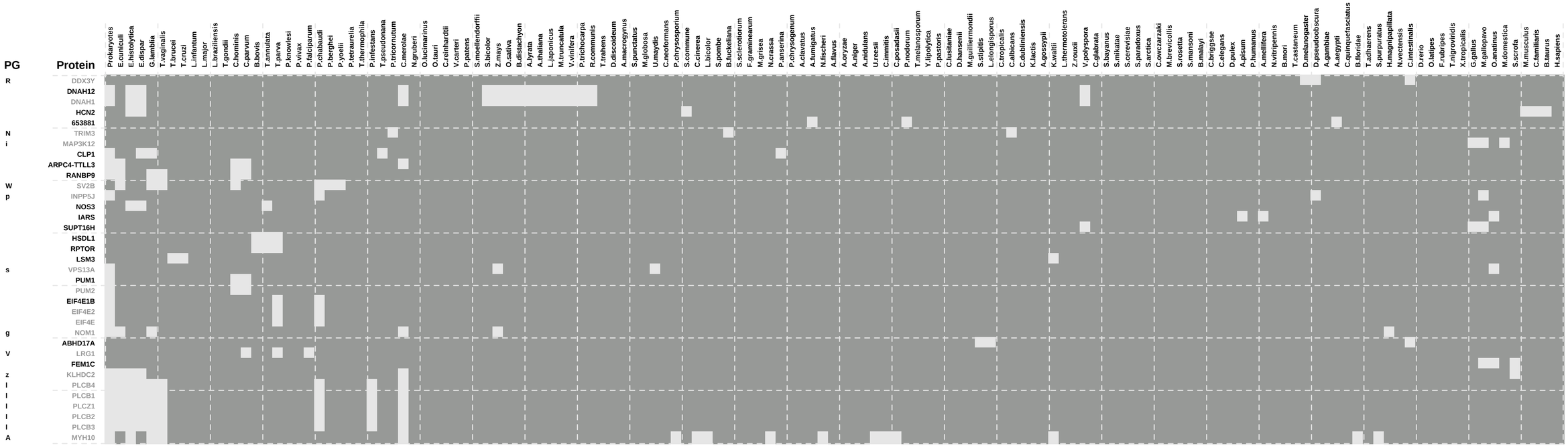




ECM 2, Gene set "basal plasma membrane", Page 11

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

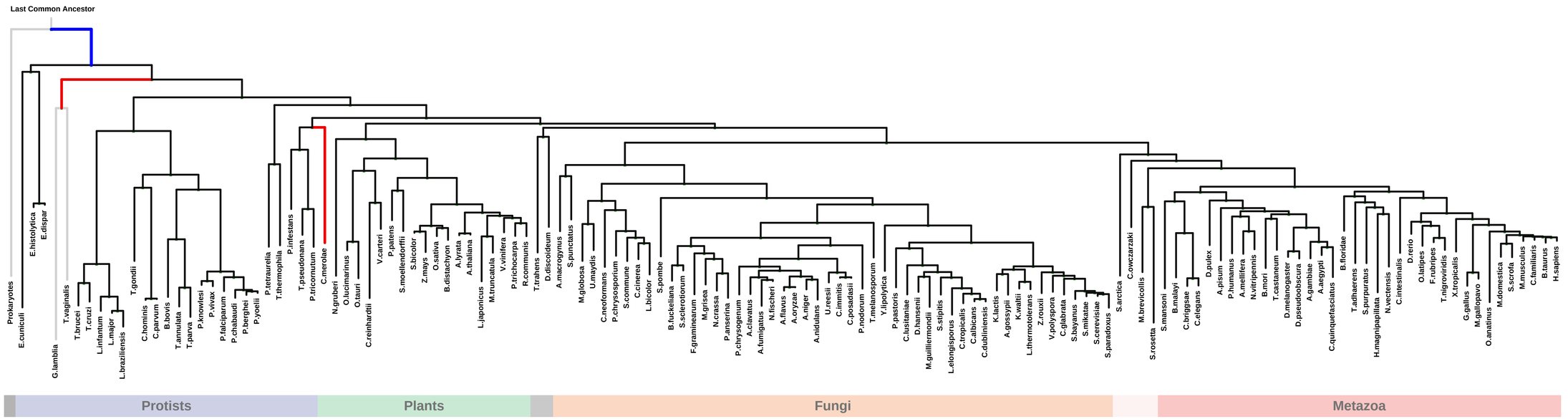


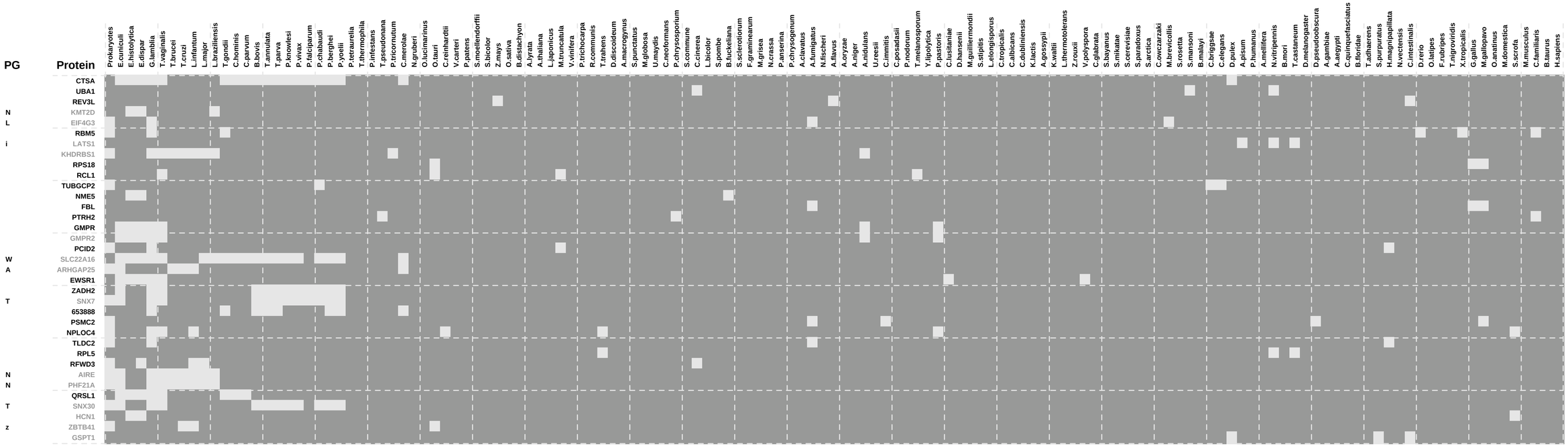


1: cilium axoneme || 2: dynein complex || 3: axonemal dynein complex || 4: axon || 5: dendritic shaft || 6: synapse || 7: voltage-gated potassium channel complex || 8: early endosome || 9: tRNA-intron endonuclease complex ||
10: microtubule associated complex || 11: acrosomal vesicle || 12: synaptic vesicle membrane || 13: growth cone || 14: ruffle || 15: apical part of cell || 16: caveola || 17: endocytic vesicle membrane || 18: chromosome ||
19: dendrite || 20: lysosome || 21: TORC1 complex || 22: catalytic step 2 spliceosome || 23: cytoplasmic stress granule || 24: mRNA cap binding complex || 25: cytoplasmic mRNA processing body || 26: eukaryotic translation initiation factor 4F complex ||

ECM 2, Gene set "basal plasma membrane", Page 12

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

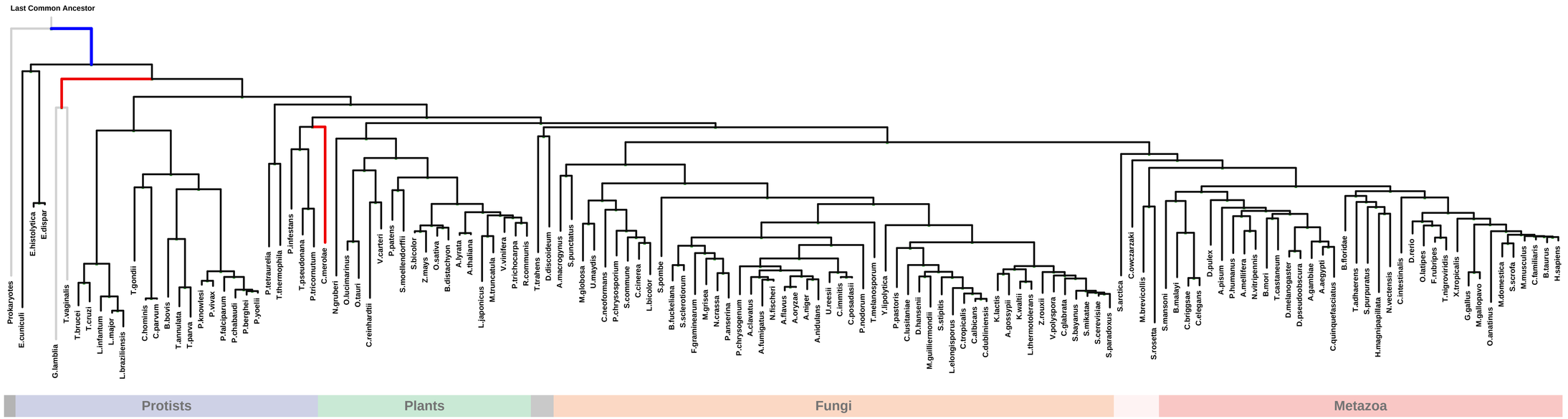


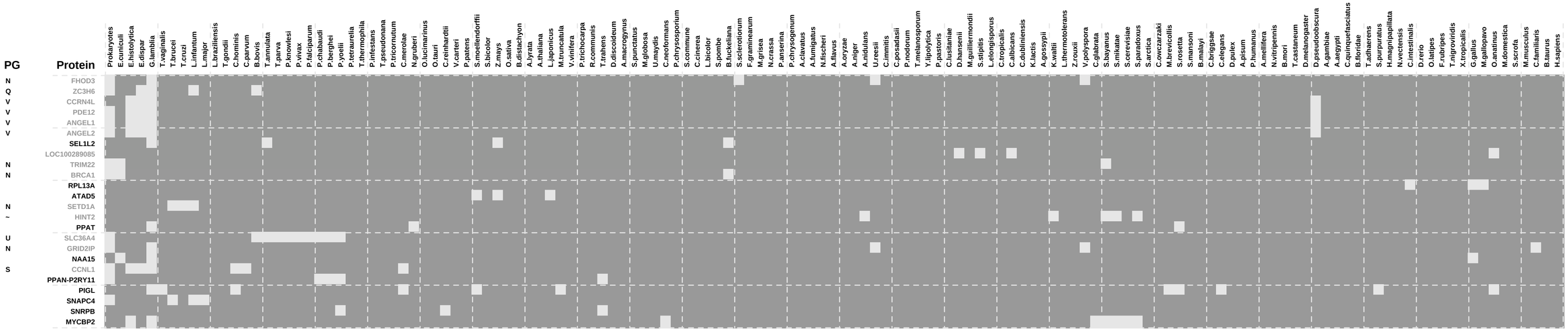


1: lysosomal lumen || 2: lysosome || 3: chromosome || 4: zeta DNA polymerase complex || 5: histone methyltransferase complex || 6: eukaryotic translation initiation factor 4F complex || 7: spliceosomal complex || 8: microtubule organizing center || 9: spindle pole || 10: cytosolic small ribosomal subunit || 11: ribosome || 12: small ribosomal subunit || 13: cytoplasmic microtubule || 14: box C/D snoRNP complex || 15: Cajal body || 16: granular component || 17: peroxisome || 18: cytoplasmic vesicle membrane || 19: proteasome accessory complex || 20: proteasome complex || 21: nuclear outer membrane-endoplasmic reticulum membrane network || 22: cytosolic large ribosomal subunit || 23: ribonucleoprotein complex ||

ECM 2, Gene set "basal plasma membrane", Page 13

Num of ECM Genes: 2. Num of Predicted Genes: 442. ECM Strength: 4.6

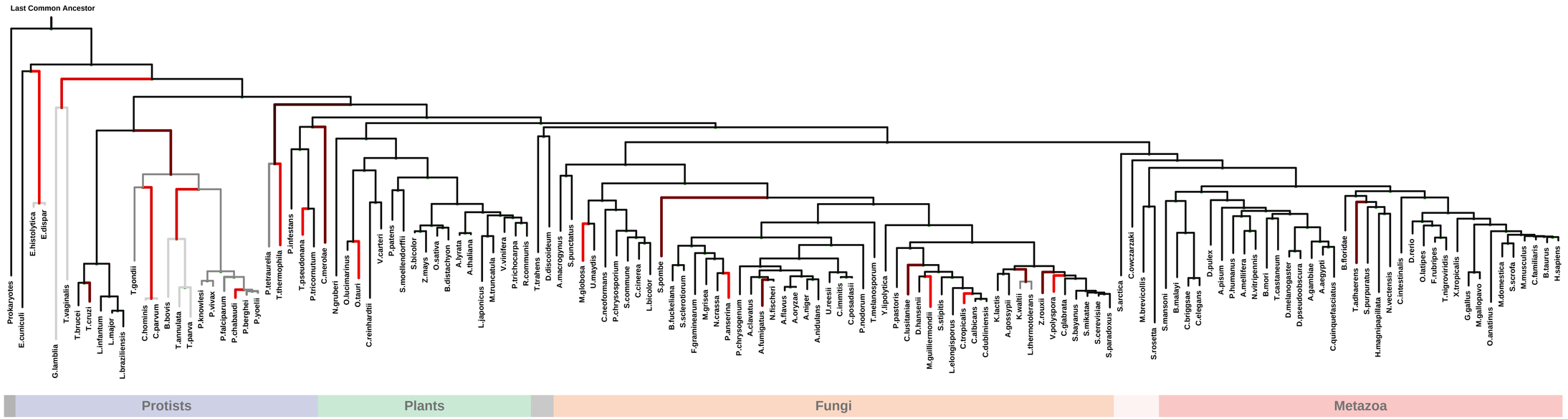


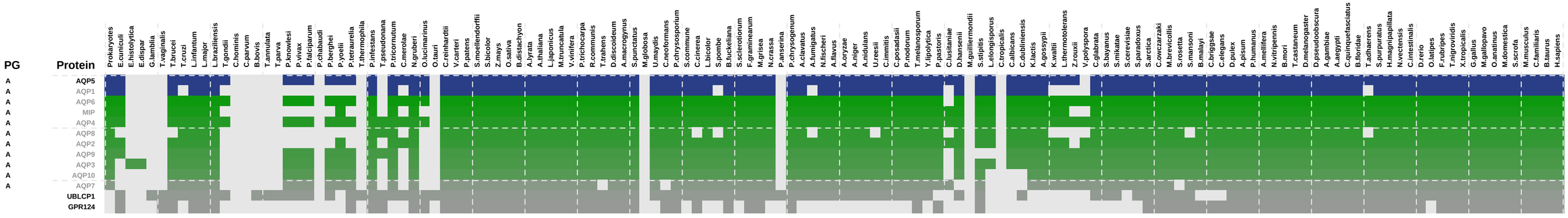


1: Cajal body || 2: nuclear speck || 3: BRCA1-A complex || 4: BRCA1-BARD1 complex || 5: chromosome || 6: filamentous actin || 7: focal adhesion || 8: gamma-tubulin ring complex || 9: ribonucleoprotein complex ||
10: ruffle || 11: ubiquitin ligase complex || 12: cytosolic large ribosomal subunit || 13: large ribosomal subunit || 14: histone methyltransferase complex || 15: Set1C/COMPASS complex || 16: postsynaptic membrane || 17: catalytic step 2 spliceosome ||
18: histone pre-mRNA 3'end processing complex || 19: small nuclear ribonucleoprotein complex || 20: spliceosomal complex || 21: U12-type spliceosomal complex || 22: U7 snRNP || 23: axon || 24: microtubule cytoskeleton

ECM 3, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 11. ECM Strength: 0.5

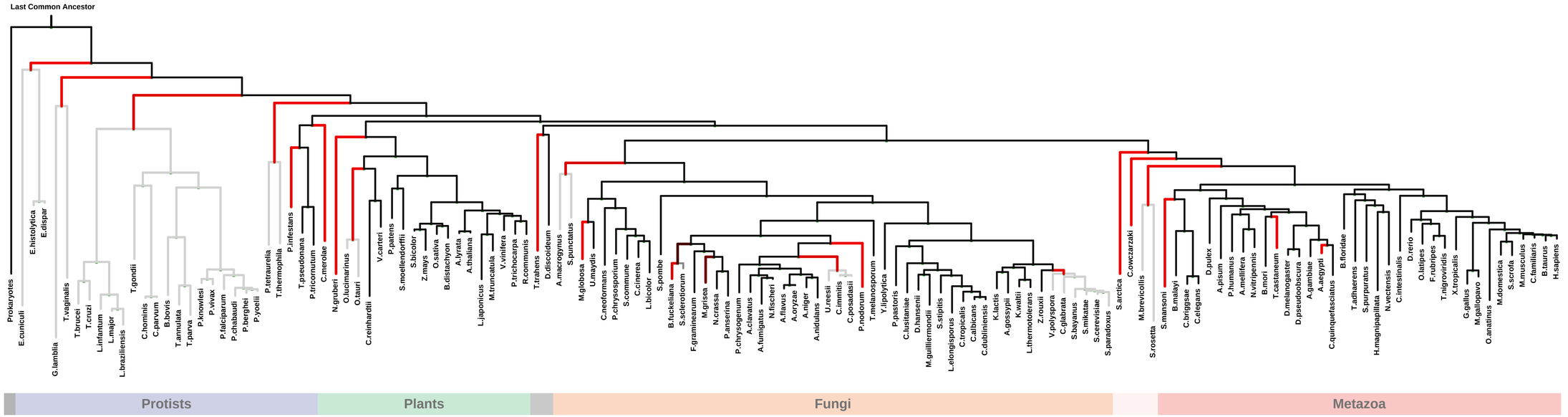


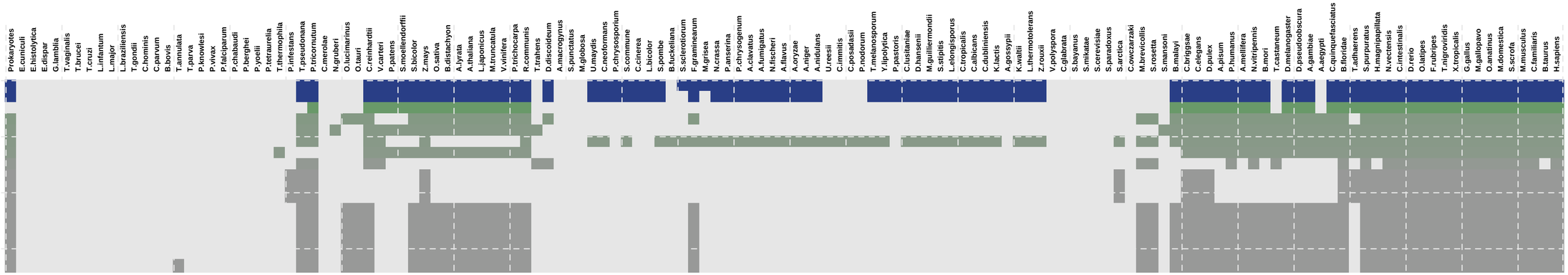


1: basal plasma membrane || 2: microvillus || 3: apical part of cell || 4: basolateral plasma membrane || 5: brush border || 6: brush border membrane || 7: nuclear membrane || 8: sarcolemma || 9: transport vesicle membrane ||
10: gap junction || 11: intracellular canaliculus || 12: cell-cell junction || 13: external side of plasma membrane || 14: clathrin-coated vesicle || 15: early endosome || 16: exocytic vesicle || 17: lysosome || 18: recycling endosome ||
19: rough endoplasmic reticulum || 20: trans-Golgi network || 21: ribonucleoprotein complex

ECM 4, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 15. ECM Strength: 13.3



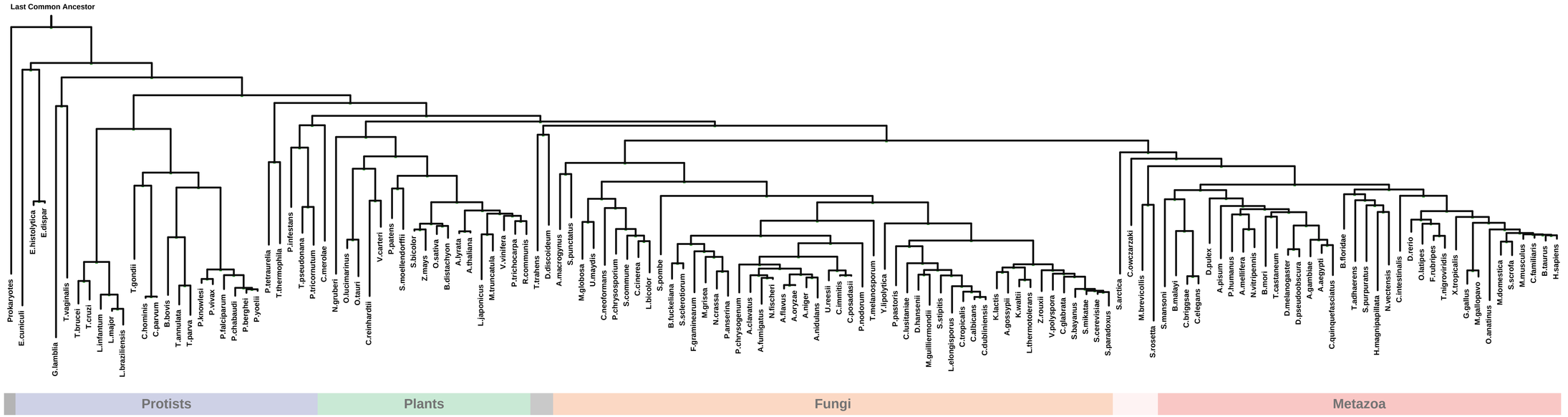


PG	Protein	LLR	Notes
A	SLC23A1		1 / 2 / 3
A	SLC23A2		1 / 4
A	SLC23A3	20.7	
B	SULT1C2	8.9	5
	GRIK3	7.8	6 / 7 / 8 / 9 / 10 / 11
	SGSH	7.5	12
	SELENBP1	6.3	
	CHST15	2.7	
C	SLC34A2	0.4	13
C	SLC34A3	0.4	13 / 14
C	SLC34A1	0.4	4 / 13
B	SULT1B1	0.3	
B	SULT1A2	0.3	
B	SULT1C4	0.3	
B	SULT2A1	0.3	
B	SULT2B1	0.3	
B	SULT1E1	0.3	15

1: basal plasma membrane || 2: brush border || 3: intracellular organelle || 4: basolateral plasma membrane || 5: microtubule cytoskeleton || 6: axon || 7: dendrite || 8: dendrite cytoplasm || 9: perikaryon || 10: postsynaptic membrane ||
11: terminal button || 12: lysosomal lumen || 13: brush border membrane || 14: cytoplasmic vesicle || 15: nuclear membrane

ECM 5, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 4. Num of Predicted Genes: 0. ECM Strength: 0.0

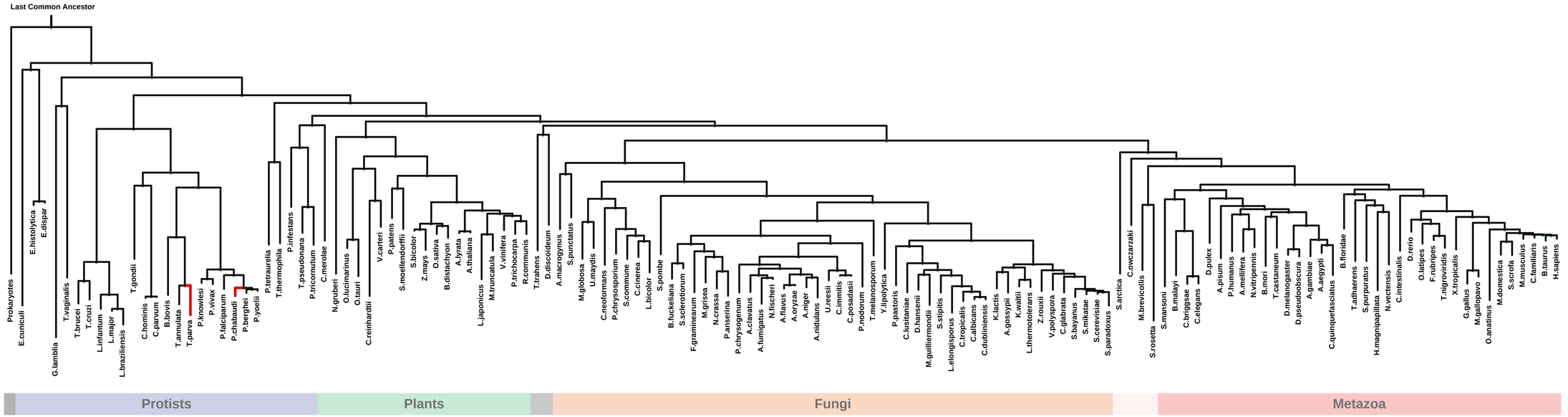


PG	Protein	LLR	Notes
A	BMPR2		1 / 2 / 3
A	ERBB2		1 / 4 / 5 / 6 / 7 / 8 / 9 / 10
A	MET		1 / 9 / 11 / 12 / 13
A	TEK		1 / 4 / 7 / 8 / 14 / 15 / 16 /

1: basal plasma membrane || 2: caveola || 3: dendrite || 4: basolateral plasma membrane || 5: endosome membrane || 6: lateral loop || 7: membrane raft || 8: microvillus || 9: postsynaptic membrane || 10: receptor complex ||
11: excitatory synapse || 12: flagellum || 13: postsynaptic density || 14: actin filament || 15: cell-cell junction || 16: focal adhesion || 17: stress fiber

ECM 6, Gene set "basal plasma membrane", Page 1

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

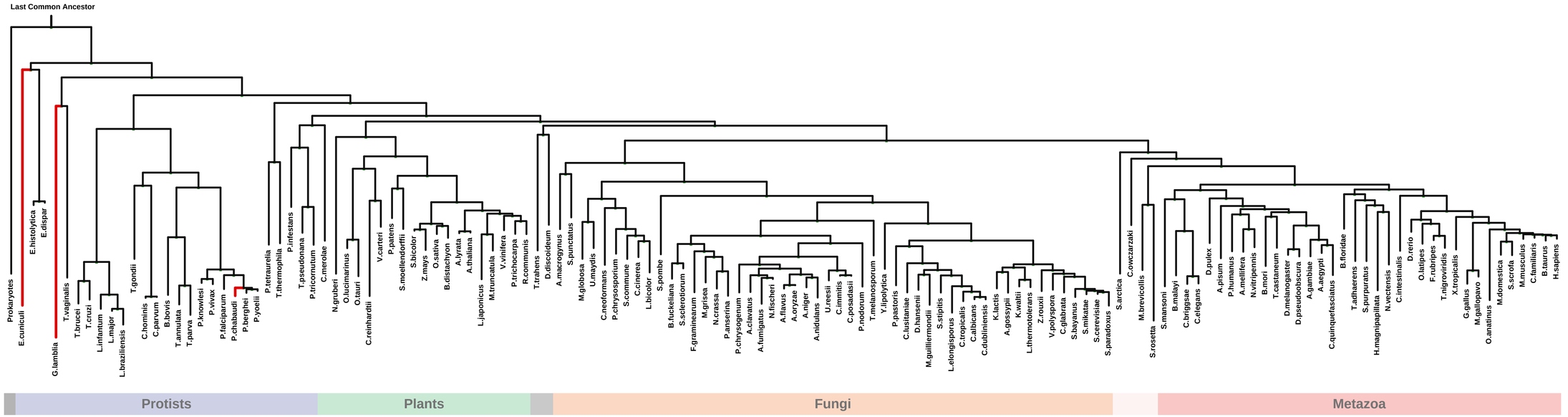


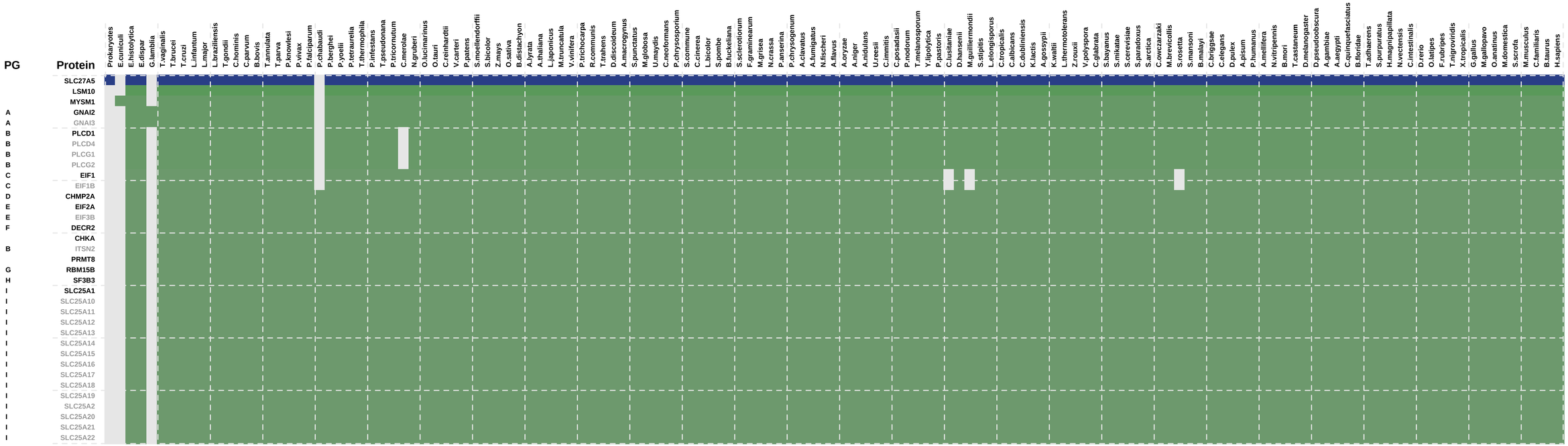
PG	Protein	LLR	Notes
	ERBB2IP		1 / 2 / 3 / 4

1: basal plasma membrane || 2: basement membrane || 3: hemidesmosome || 4: nuclear membrane

ECM 7, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 500

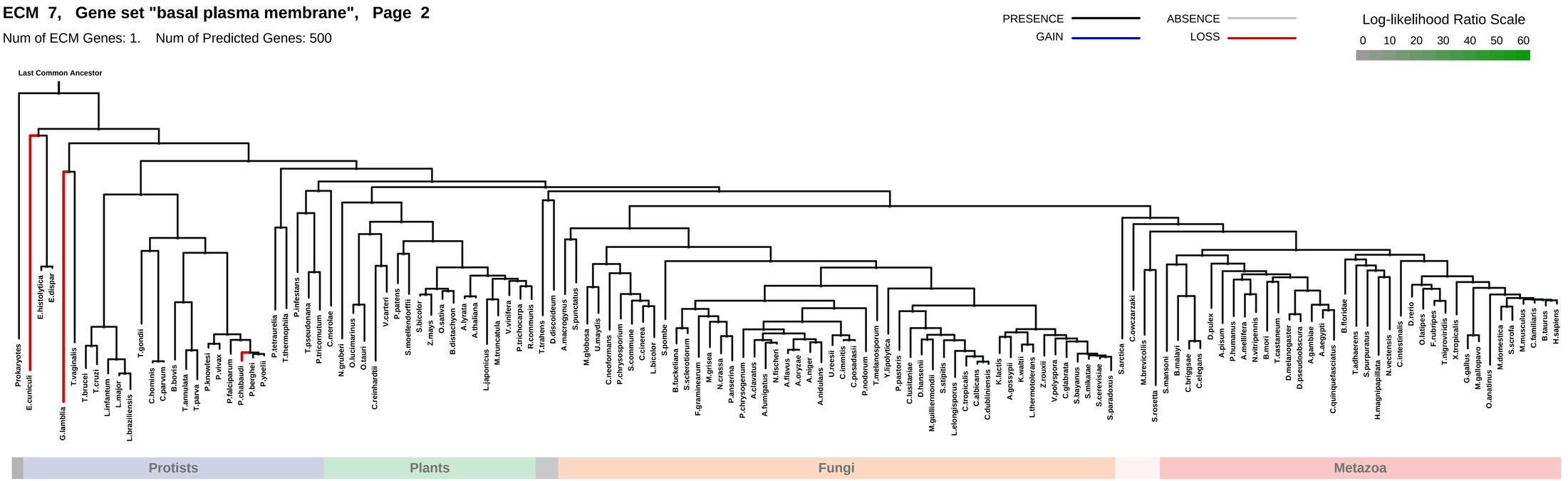


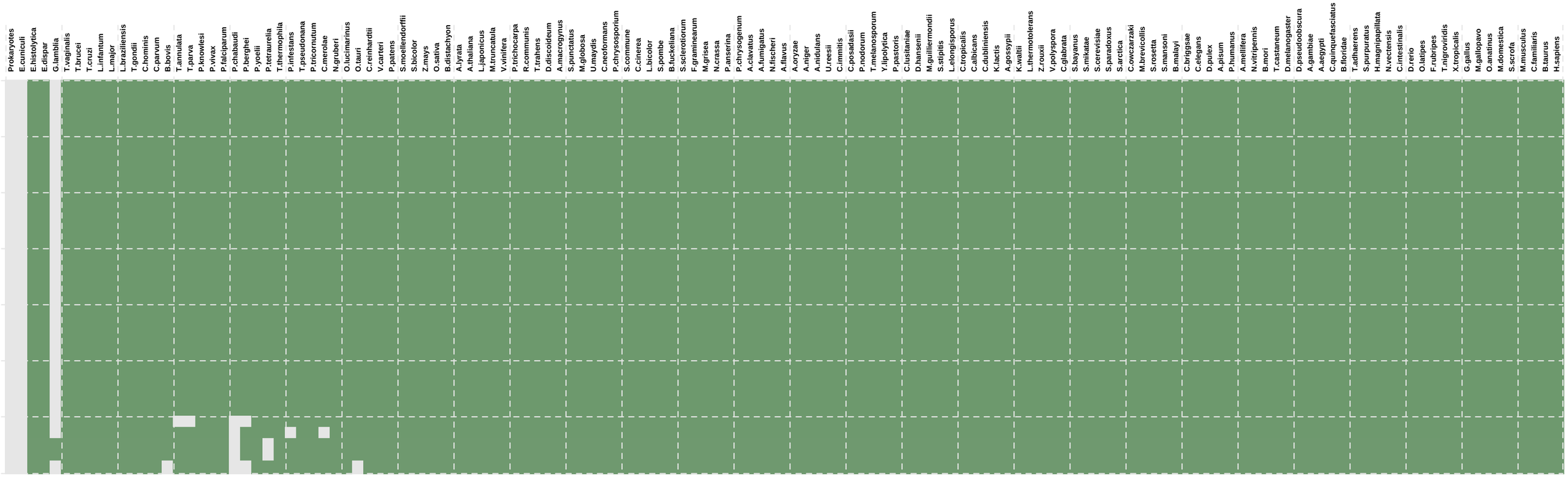


1: basal plasma membrane || 2: integral to endoplasmic reticulum membrane || 3: Cajal body || 4: U7 snRNP || 5: chromatin remodeling complex || 6: extrinsic to internal side of plasma membrane || 7: heterotrimeric G-protein complex ||
8: membrane raft || 9: midbody || 10: zymogen granule || 11: lamellipodium || 12: neuron projection || 13: ruffle || 14: signalosome || 15: late endosome membrane || 16: eukaryotic translation initiation factor 2 complex ||
17: eukaryotic translation initiation factor 3 complex || 18: peroxisome || 19: catalytic step 2 spliceosome || 20: small nuclear ribonucleoprotein complex || 21: spliceosomal complex || 22: U12-type spliceosomal complex || 23: integral to peroxisomal membrane ||

ECM 7, Gene set "basal plasma membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 500



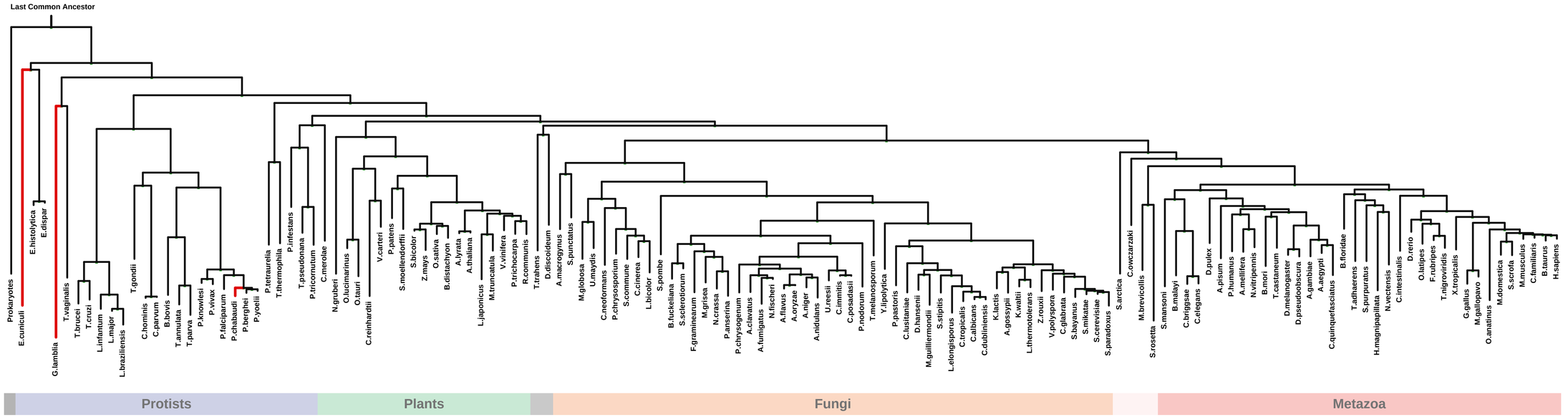


PG	Protein	LLR	Notes
I	SLC25A26	18.7	
I	SLC25A28	18.7	
I	SLC25A29	18.7	
I	SLC25A3	18.7	
I	SLC25A30	18.7	
I	SLC25A31	18.7	1 / 2
I	SLC25A32	18.7	
I	SLC25A33	18.7	
I	SLC25A34	18.7	
I	SLC25A36	18.7	
I	SLC25A37	18.7	
I	SLC25A38	18.7	
I	SLC25A39	18.7	
I	SLC25A4	18.7	3
I	SLC25A40	18.7	
I	SLC25A41	18.7	
I	SLC25A42	18.7	
I	SLC25A43	18.7	
I	SLC25A44	18.7	
I	SLC25A45	18.7	
I	SLC25A48	18.7	
I	SLC25A5	18.7	4 / 5
I	SLC25A6	18.7	6
J	**TNPO1**	**18.7**	7
J	TNPO2	18.7	7
I	UCP1	18.7	
I	UCP2	18.7	
I	UCP3	18.7	
I	100508457	18.7	
I	100510457	18.7	
K	**UCHL1**	**18.6**	
B	PLCE1	18.3	
A	GNAQ	17.9	8 / 9 / 10
A	GNA14	17.9	8 / 9
L	**FBXL14**	**17.9**	

1: cilium || 2: flagellum || 3: mitochondrial outer membrane || 4: mitochondrial nucleoid || 5: MMXD complex || 6: mitochondrial inner membrane presequence translocase complex || 7: nuclear pore || 8: extrinsic to internal side of plasma membrane || 9: heterotrimeric G-protein complex || 10: nuclear membrane

ECM 7, Gene set "basal plasma membrane", Page 3

Num of ECM Genes: 1. Num of Predicted Genes: 500

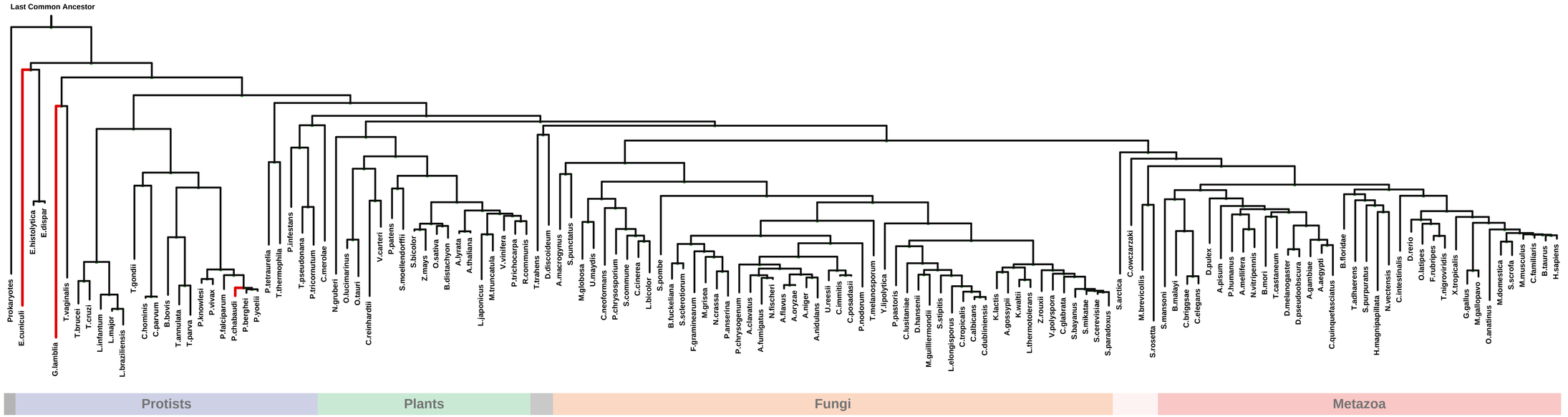


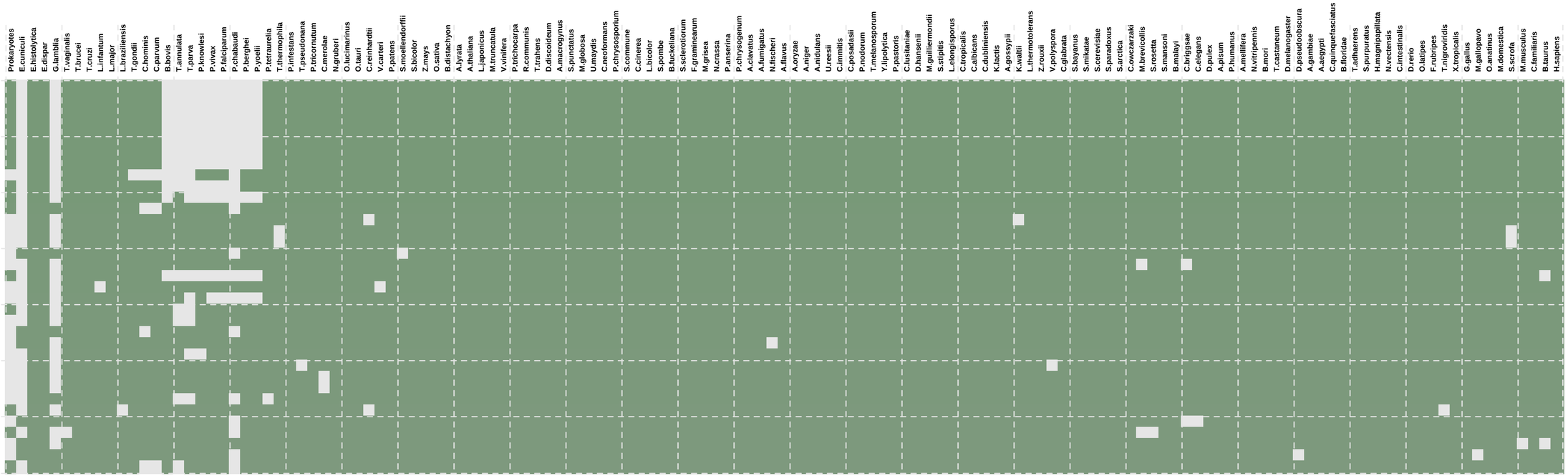
PG	Protein	LLR	Notes
M	NAA15	17.7	
N	AHCYL1	17.0	
N	AHCYL2	17.0	
N	AHCY	17.0	1
O	DBR1	16.9	
P	METTL21B	16.8	
H	DDB1	16.6	2 / 3 / 4
H	100290337	16.6	
F	WWOX	16.6	5
L	FBXL2	16.5	
Q	ATP6V1E1	16.4	5 / 6 / 7 / 8
Q	ATP6V1E2	16.4	8 / 9
M	NAA16	16.1	
	VPS53	15.9	10 / 11
	MPI	15.8	
	VPS11	15.8	6 / 12 / 13 / 14 / 15
R	MDH2	15.8	
S	DIAPH3	15.8	
S	FMNL3	15.8	
T	LRRC10	15.8	16
	LENG8	15.6	
U	NSFL1C	15.6	17 / 18
B	ITSN1	15.6	12 / 19 / 20 / 21 / 22
F	HPGD	15.5	
F	HSD17B14	15.5	
V	RALYL	15.4	
F	HSD17B7	15.4	
	PRPF39	15.3	
	POLD2	14.8	
B	PLCL1	14.7	
	TBC1D21	14.7	
W	INPP5K	14.6	21 / 23 / 24 / 25
W	INPP5E	14.6	26 / 27
X	ALDH1A3	14.3	
Y	MGAM	14.3	

1: melanosome || 2: Cul4A-RING ubiquitin ligase complex || 3: Cul4B-RING ubiquitin ligase complex || 4: Cul4-RING ubiquitin ligase complex || 5: microvillus || 6: endosome || 7: proton-transporting two-sector ATPase complex ||
8: proton-transporting two-sector ATPase complex, catalytic domain || 9: acrosomal vesicle || 10: endosome membrane || 11: GARP complex || 12: endocytic vesicle || 13: HOPS complex || 14: late endosome membrane || 15: lysosomal membrane ||
16: myofibril || 17: chromosome || 18: Golgi stack || 19: coated pit || 20: lamellipodium || 21: neuron projection || 22: synapse || 23: ruffle || 24: ruffle membrane || 25: trans-Golgi network || 26: cilium axoneme ||

ECM 7, Gene set "basal plasma membrane", Page 4

Num of ECM Genes: 1. Num of Predicted Genes: 500



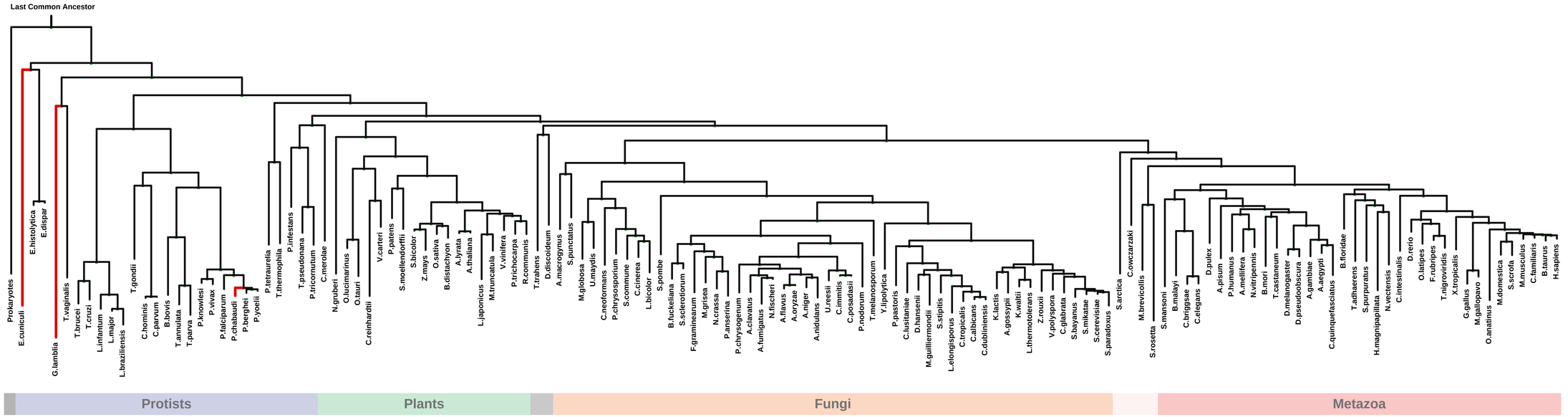


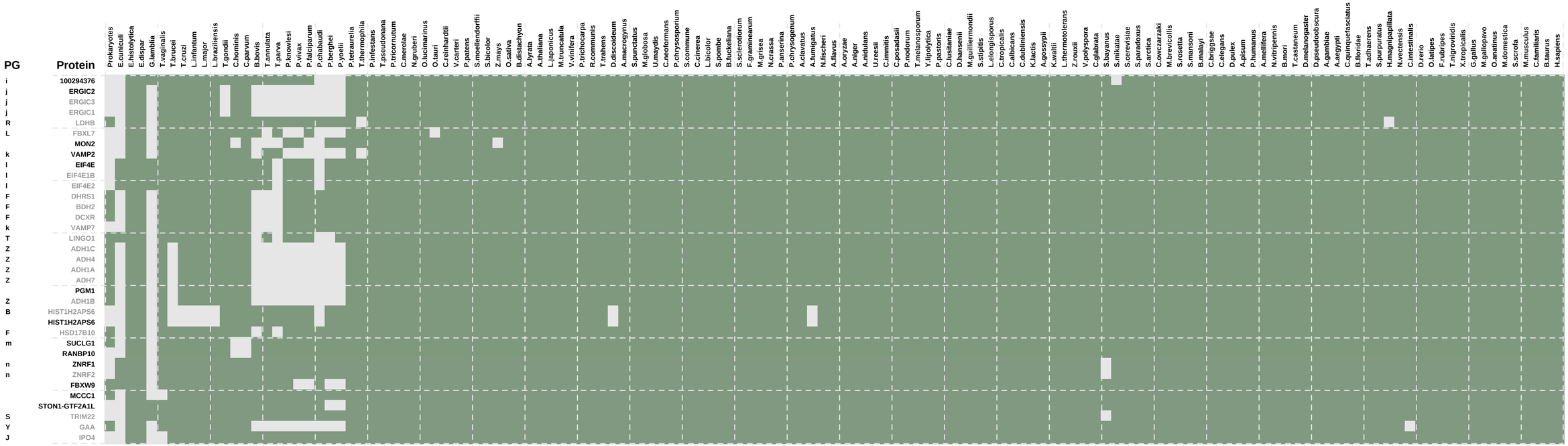
PG	Protein	LLR	Notes
Y	GANAB	14.3	1 / 2
Y	GANC	14.3	
Z	SORD	14.3	3 / 4 / 5
a	ALG11	14.3	
Y	SI	14.3	6 / 7
Z	ADH5	14.3	
Y	100508894	14.3	
X	ALDH1A2	14.3	
	CHMP5	14.3	8
a	ALG2	14.1	
b	PEX5	14.0	9 / 10 / 11
c	WIPI1	13.6	8 / 12 / 13 / 14 / 15 / 16
U	UBXN2B	13.5	
d	STX5	13.3	17 / 18
d	100510546	13.3	
	POLR3F	13.3	19
	PDCD2L	13.3	
b	PEX5L	13.1	10 / 20 / 21 / 22
	XAB2	13.1	23
L	FBXL20	13.0	
F	HSD17B8	13.0	24
K	UCHL3	13.0	
	NOL10	12.9	
	RABL6	12.7	
e	PANK2	12.5	25
	BTF3	12.5	
	GAPVD1	12.5	26
f	CAPN3	12.5	27 / 28 / 29
A	GNA11	12.2	30 / 31
B	EPS15L1	12.0	32
	TUBGCP2	12.0	33 / 34 / 35
g	PDSS1	11.9	
h	SSRP1	11.9	36
W	INPP5J	11.8	37 / 38 / 39
c	WIPI2	11.7	12 / 15 / 40

1: endoplasmic reticulum lumen || 2: melanosome || 3: cilium || 4: flagellum || 5: mitochondrial membrane || 6: brush border || 7: membrane raft || 8: endosome membrane || 9: peroxisomal matrix || 10: peroxisomal membrane ||
11: peroxisome || 12: autophagic vacuole membrane || 13: clathrin-coated vesicle || 14: pre-autophagosomal structure || 15: pre-autophagosomal structure membrane || 16: trans-Golgi network || 17: endoplasmic reticulum-Golgi intermediate compartment membrane ||
18: SNARE complex || 19: DNA-directed RNA polymerase III complex || 20: cell tip || 21: dendrite || 22: intracellular cyclic nucleotide activated cation channel complex || 23: catalytic step 2 spliceosome || 24: mitochondrial envelope ||

ECM 7, Gene set "basal plasma membrane", Page 5

Num of ECM Genes: 1. Num of Predicted Genes: 500

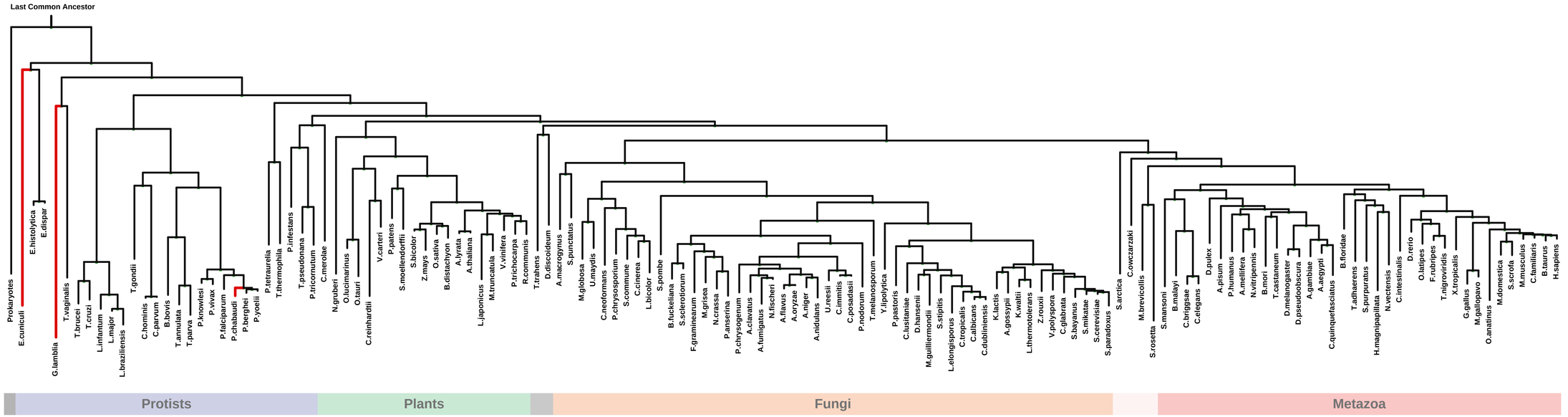


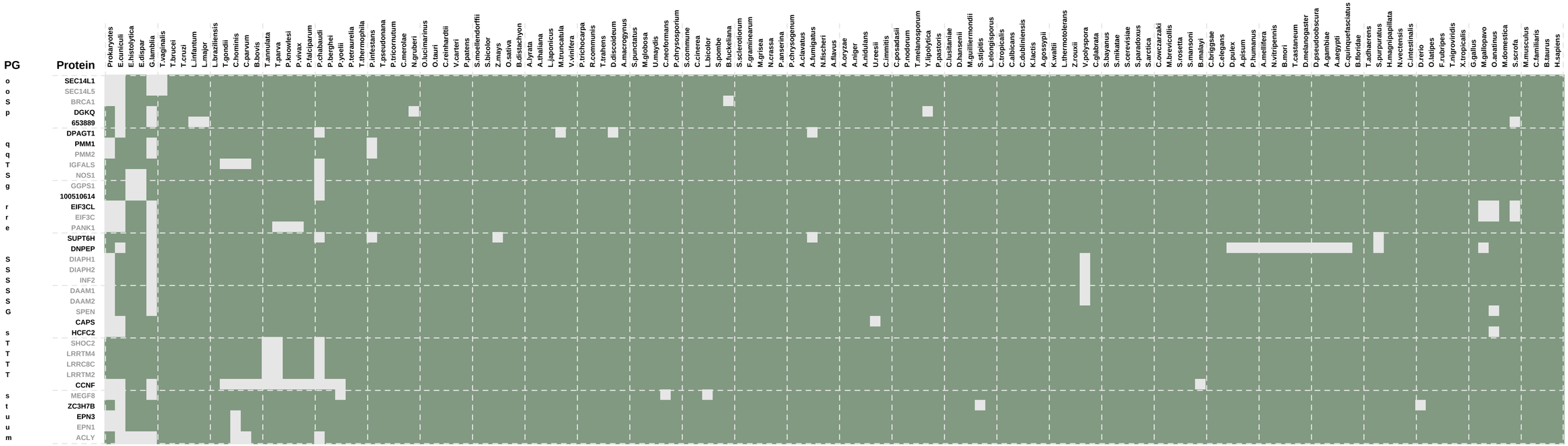


1: endoplasmic reticulum-Golgi intermediate compartment membrane || 2: endoplasmic reticulum-Golgi intermediate compartment || 3: SCF ubiquitin ligase complex || 4: ubiquitin ligase complex || 5: trans-Golgi network || 6: clathrin-coated vesicle ||
7: clathrin-sculpted gamma-aminobutyric acid transport vesicle membrane || 8: clathrin-sculpted glutamate transport vesicle membrane || 9: clathrin-sculpted monoamine transport vesicle membrane || 10: endocytic vesicle membrane || 11: neuron projection ||
12: secretory granule membrane || 13: SNARE complex || 14: synaptic vesicle membrane || 15: cytoplasmic mRNA processing body || 16: cytoplasmic stress granule || 17: eukaryotic translation initiation factor 4F complex || 18: mRNA cap binding complex ||

ECM 7, Gene set "basal plasma membrane", Page 6

Num of ECM Genes: 1. Num of Predicted Genes: 500

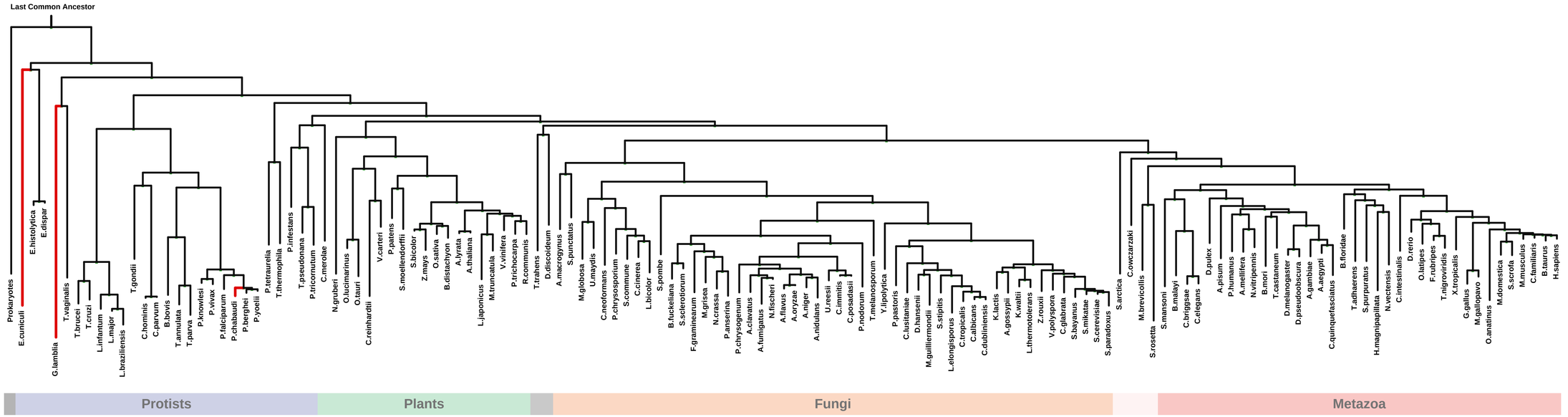


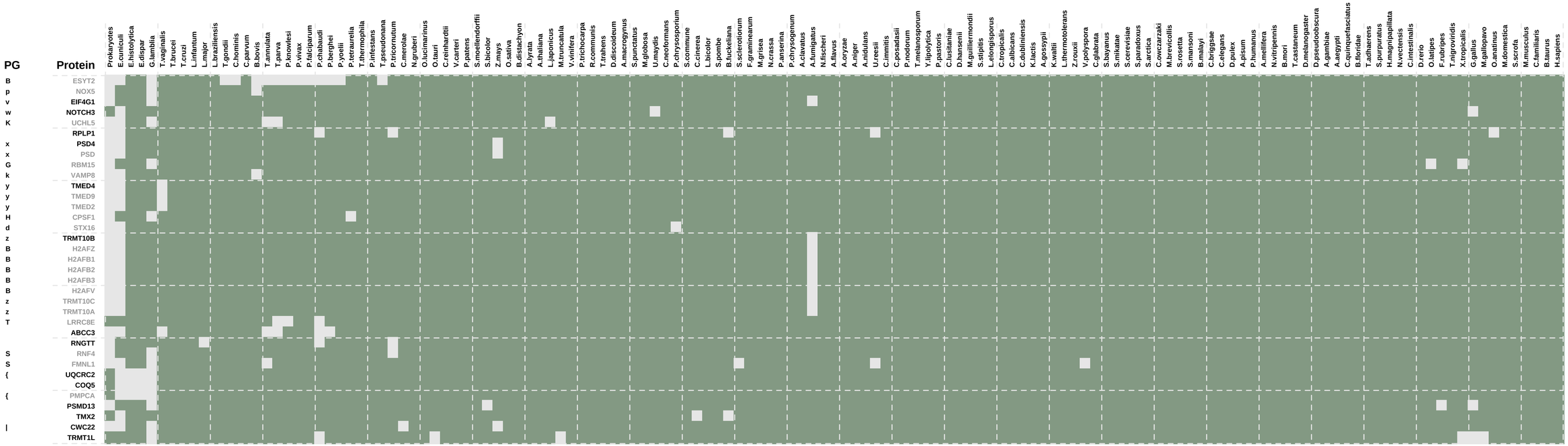


1: BRCA1-A complex || 2: BRCA1-BARD1 complex || 3: chromosome || 4: filamentous actin || 5: focal adhesion || 6: gamma-tubulin ring complex || 7: ribonucleoprotein complex || 8: ruffle || 9: ubiquitin ligase complex ||
10: nuclear speck || 11: integral to endoplasmic reticulum membrane || 12: dendritic spine || 13: photoreceptor inner segment || 14: sarcolemma || 15: sarcoplasmic reticulum || 16: eukaryotic translation initiation factor 3 complex ||
17: cell periphery || 18: mitotic spindle || 19: ruffle membrane || 20: early endosome || 21: stress fiber || 22: transcriptional repressor complex || 23: protein phosphatase type 1 complex || 24: postsynaptic membrane || 25: centriole ||

ECM 7, Gene set "basal plasma membrane", Page 7

Num of ECM Genes: 1. Num of Predicted Genes: 500

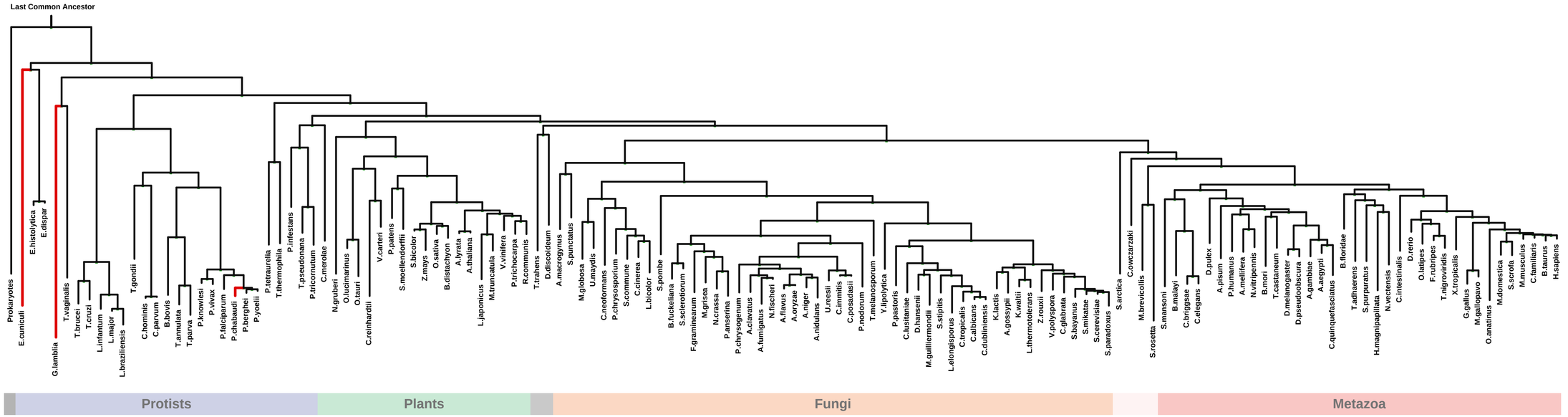




1: eukaryotic translation initiation factor 4F complex || 2: Ino80 complex || 3: proteasome complex || 4: cytosolic large ribosomal subunit || 5: trans-Golgi network || 6: ruffle || 7: early endosome || 8: late endosome membrane ||
9: lysosomal membrane || 10: recycling endosome || 11: secretory granule membrane || 12: SNARE complex || 13: endoplasmic reticulum-Golgi intermediate compartment || 14: endoplasmic reticulum-Golgi intermediate compartment membrane ||
15: trans-Golgi network transport vesicle || 16: COPI-coated vesicle || 17: COPI-coated vesicle membrane || 18: Golgi cisterna membrane || 19: zymogen granule membrane || 20: mRNA cleavage and polyadenylation specificity factor complex ||

ECM 7, Gene set "basal plasma membrane", Page 8

Num of ECM Genes: 1. Num of Predicted Genes: 500

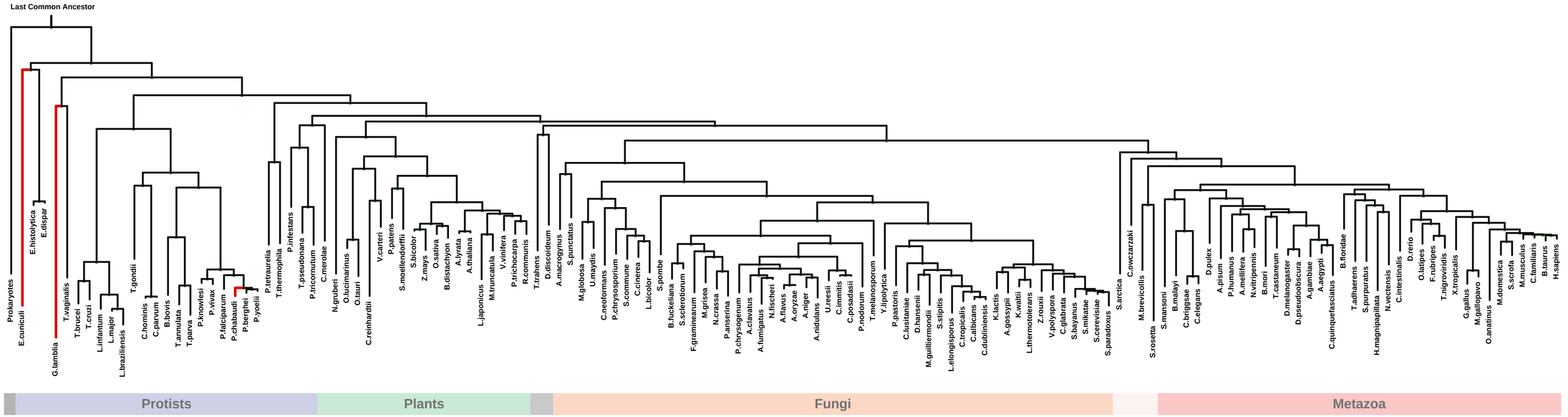


PG	Protein	LLR	Notes
S	PCGF3	9.2	1
	HSPE1-MOB4	9.2	
P	METTL21A	9.1	
Y	KIAA1161	9.1	2
	RPL27A	9.1	3
	UBE4A	9.0	4
T	CPN2	9.0	
	WDR74	9.0	
n	RNF43	9.0	5
}	COPG1	9.0	6
}	COPG2	9.0	6
X	ALDH4A1	8.9	
X	ALDH5A1	8.9	
X	ALDH6A1	8.9	
X	ALDH7A1	8.9	
X	ALDH8A1	8.9	
X	ALDH3A1	8.9	
X	ALDH3A2	8.9	7
~	CBS	8.9	
	CTH	8.9	
X	ALDH3B2	8.9	
	NIT2	8.9	
X	ALDH1L1	8.9	
w	ANKRD62	8.9	
T	LUM	8.9	8 / 9 / 10 / 11 / 12
F	HSD11B1L	8.8	
w	652022	8.8	
B	ESYT1	8.8	
	IPO7	8.7	13
	PFKL	8.7	14
	ASNSD1	8.7	
X	ALDH1A1	8.6	
X	ALDH9A1	8.6	
X	ALDH1B1	8.6	
	CUL2	8.6	15

1: PcG protein complex || 2: nuclear membrane || 3: cytosolic large ribosomal subunit || 4: ubiquitin ligase complex || 5: nuclear envelope || 6: COPI vesicle coat || 7: peroxisome || 8: extracellular matrix || 9: fibrillar collagen ||
10: Golgi lumen || 11: lysosomal lumen || 12: proteinaceous extracellular matrix || 13: nuclear pore || 14: 6-phosphofructokinase complex || 15: Cul2-RING ubiquitin ligase complex

ECM 7, Gene set "basal plasma membrane", Page 9

Num of ECM Genes: 1. Num of Predicted Genes: 500

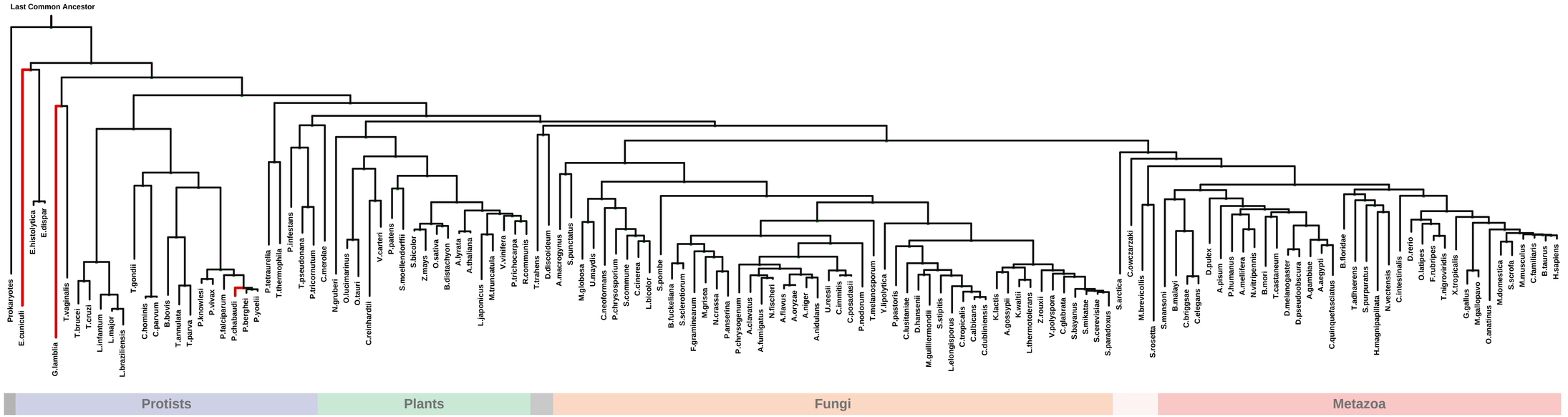


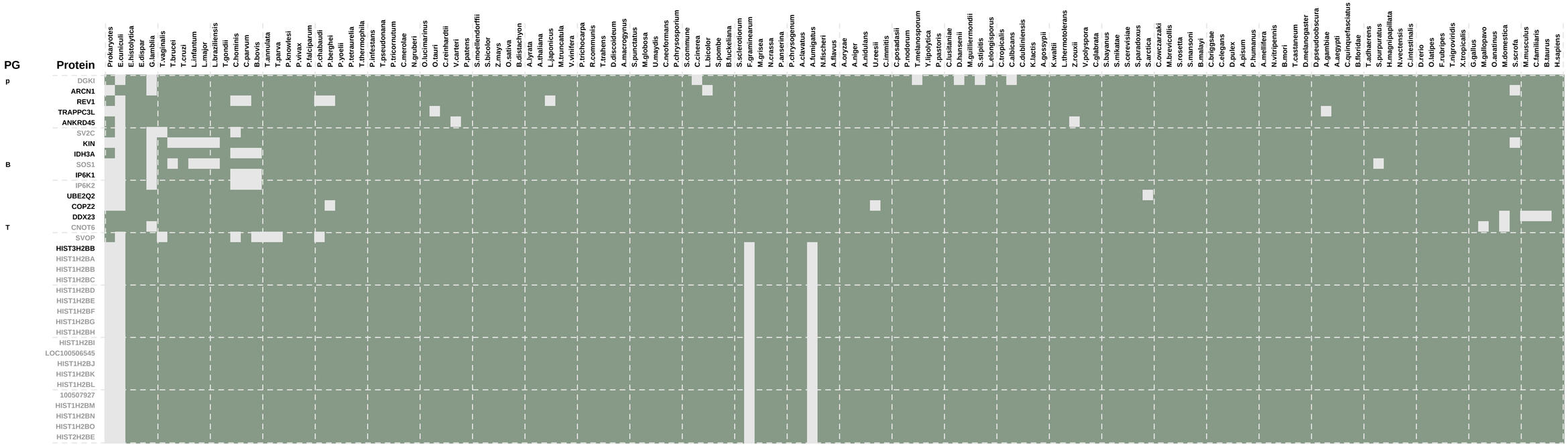
PG	Protein	LLR	Notes
p	DGKA	8.6	
	CUL4A	8.6	1 / 2
	RABGGTA	8.6	
T	LRRIQ4	8.6	
S	LNX2	8.5	
	IMPA1	8.5	3
	COASY	8.5	4
	SV2B	8.5	5 / 6
	PTEN	8.5	7 / 8 / 9 / 10 / 11 / 12
	SREK1	8.5	13
	VBP1	8.5	14
	VPS26A	8.4	15 / 16 / 17 / 18
	VPS26B	8.4	17
	DUSP21	8.4	
S	PDZRN4	8.4	
	VPS33A	8.4	19 / 20 / 21 / 22 / 23
S	TRIM10	8.4	
	NUTF2	8.2	24 / 25
B	PLCD3	8.2	26
	ANKIB1	8.2	
u	ENTHD1	8.2	
R	LDHAL6A	8.2	
T	LRCH2	8.1	
	RBM41	8.1	
w	ANKRD13C	8.1	
T	BGN	8.1	27 / 28 / 29 / 30 / 31 / 32
	TRMT5	8.1	
d	STX7	8.0	22 / 23 / 33 / 34
~	SRR	8.0	35
T	LRIG3	8.0	
A	GNAT2	8.0	36 / 37 / 38 / 39 / 40
S	TRIM21	7.9	41 / 42 / 43
	UNG	7.9	
A	GNAT3	7.9	36 / 37 / 38 / 39
A	GNAT1	7.9	36 / 37 / 38 / 39 / 40 / 44

1: Cul4A-RING ubiquitin ligase complex || 2: Cul4-RING ubiquitin ligase complex || 3: axon || 4: mitochondrial outer membrane || 5: acrosomal vesicle || 6: synaptic vesicle membrane || 7: cell projection || 8: internal side of plasma membrane ||
9: myelin sheath adaxonal region || 10: neuron projection || 11: PML body || 12: Schmidt-Lanterman incisure || 13: spliceosomal complex || 14: prefoldin complex || 15: endosome || 16: endosome membrane || 17: retromer complex ||
18: vesicle || 19: early endosome || 20: HOPS complex || 21: late endosome || 22: late endosome membrane || 23: lysosomal membrane || 24: microtubule cytoskeleton || 25: nuclear pore || 26: cleavage furrow || 27: extracellular matrix ||

ECM 7, Gene set "basal plasma membrane", Page 10

Num of ECM Genes: 1. Num of Predicted Genes: 500

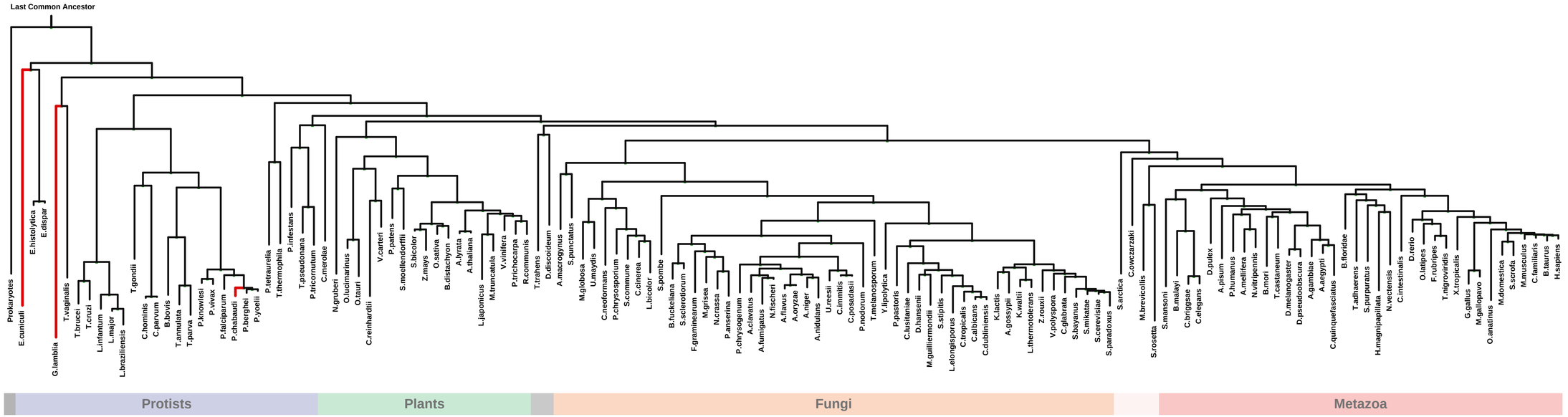


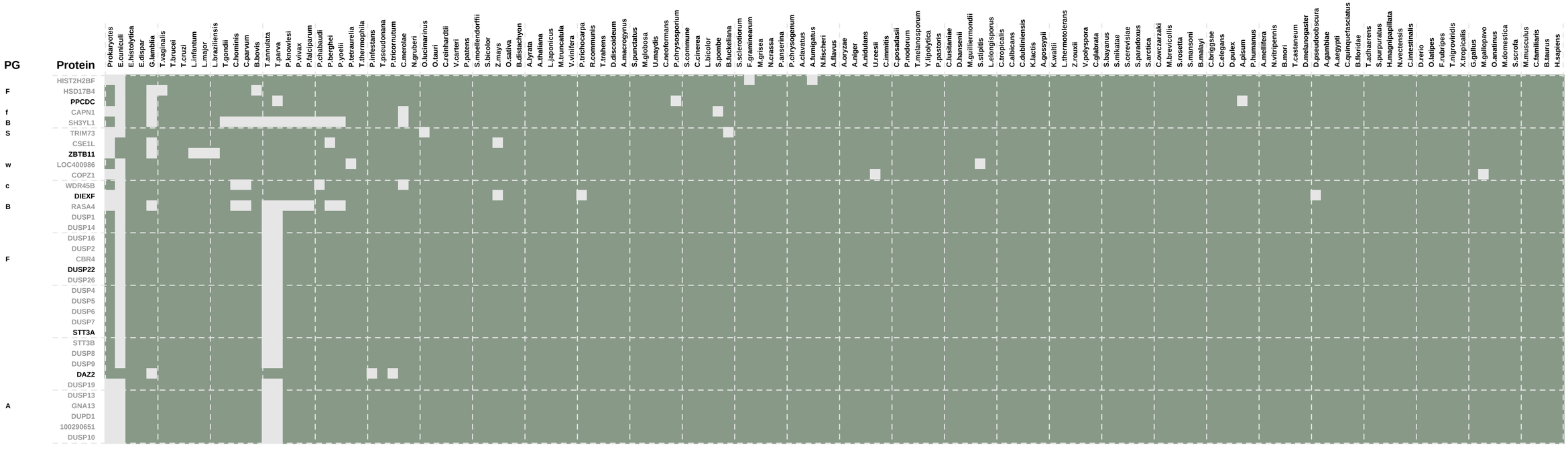


1: guanyl-nucleotide exchange factor complex || 2: clathrin adaptor complex || 3: COPI vesicle coat || 4: synaptic vesicle membrane || 5: nuclear matrix || 6: intermediate filament cytoskeleton || 7: cis-Golgi network || 8: catalytic step 2 spliceosome ||
9: U5 snRNP || 10: synaptic vesicle || 11: nucleosome || 12: extrinsic to plasma membrane

ECM 7, Gene set "basal plasma membrane", Page 11

Num of ECM Genes: 1. Num of Predicted Genes: 500

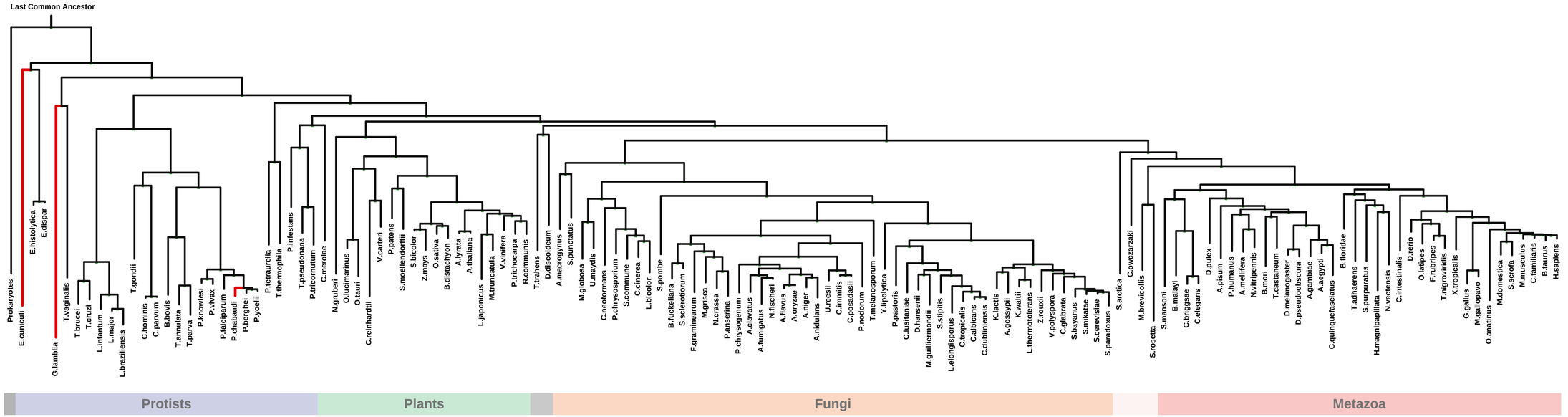


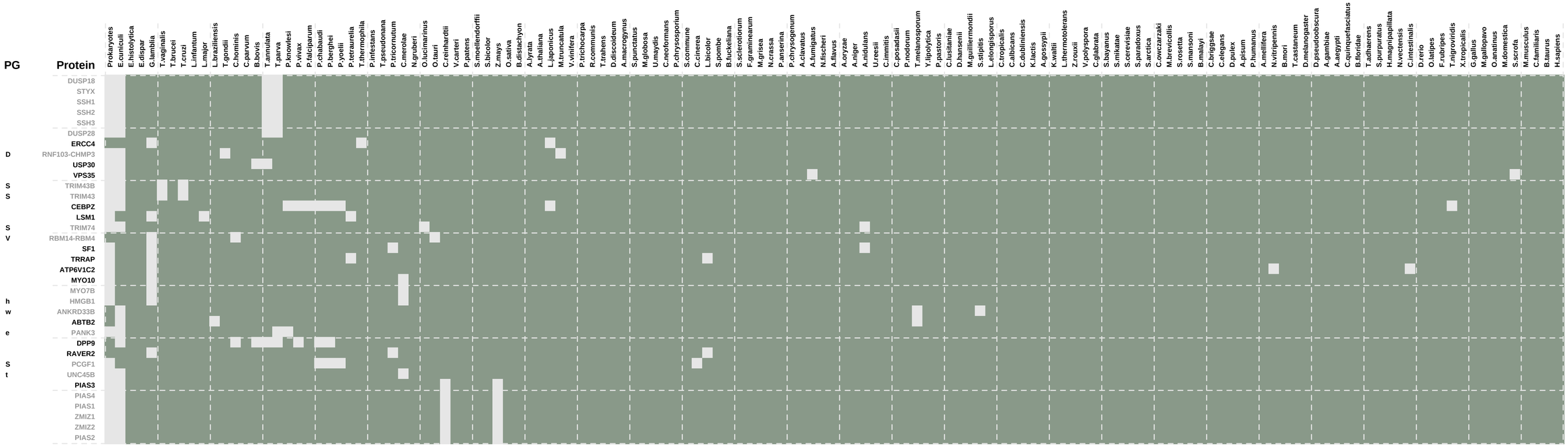


1: nucleosome || 2: peroxisomal matrix || 3: peroxisomal membrane || 4: peroxisome || 5: ruffle membrane || 6: nuclear pore || 7: COPI vesicle coat || 8: intrinsic to internal side of plasma membrane || 9: cytoplasmic membrane-bounded vesicle ||
10: oligosaccharyltransferase complex || 11: brush border membrane || 12: extrinsic to internal side of plasma membrane || 13: heterotrimeric G-protein complex || 14: melanosome

ECM 7, Gene set "basal plasma membrane", Page 12

Num of ECM Genes: 1. Num of Predicted Genes: 500

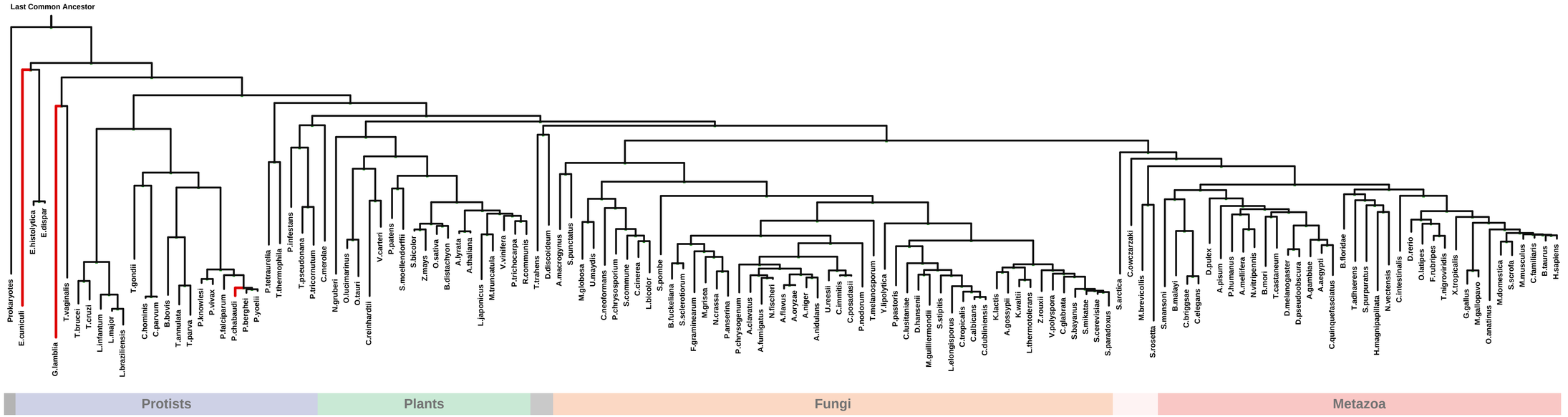


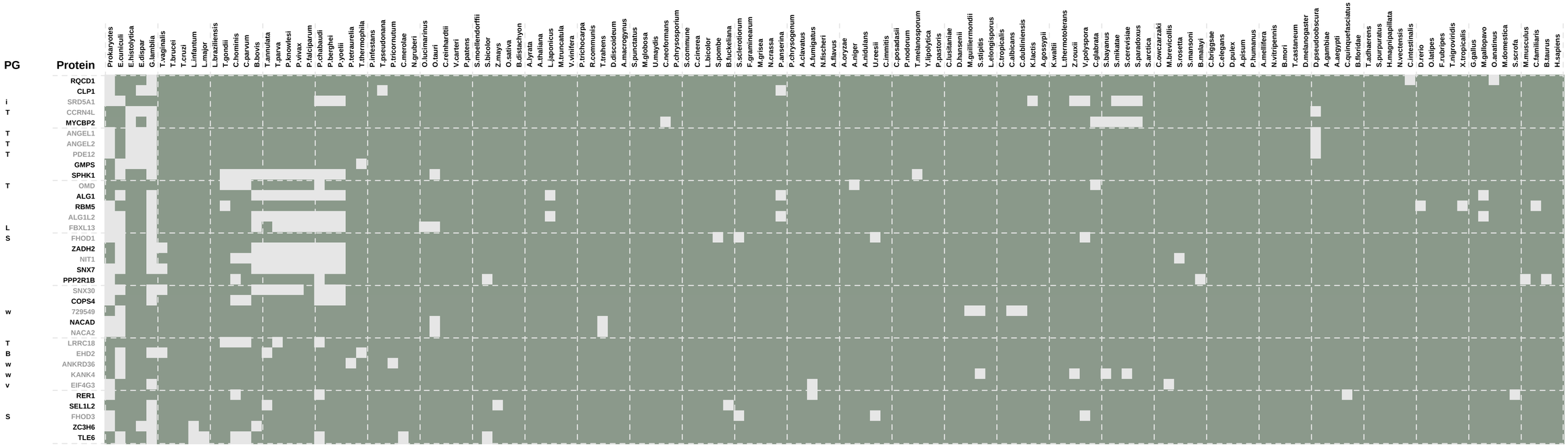


1: cleavage furrow || 2: lamellipodium || 3: midbody || 4: chromosome, telomeric region || 5: nuclear chromosome, telomeric region || 6: nucleotide-excision repair complex || 7: mitochondrial outer membrane || 8: endosome ||
9: ribonucleoprotein complex || 10: ribosome || 11: spliceosomal complex || 12: NuA4 histone acetyltransferase complex || 13: PCAF complex || 14: STAGA complex || 15: transcription factor TFTC complex || 16: proton-transporting V-type ATPase, V1 domain ||
17: cell cortex || 18: filopodium membrane || 19: filopodium tip || 20: myosin complex || 21: neuron projection || 22: ruffle || 23: condensed chromosome || 24: transcriptional repressor complex || 25: PcG protein complex ||

ECM 7, Gene set "basal plasma membrane", Page 13

Num of ECM Genes: 1. Num of Predicted Genes: 500

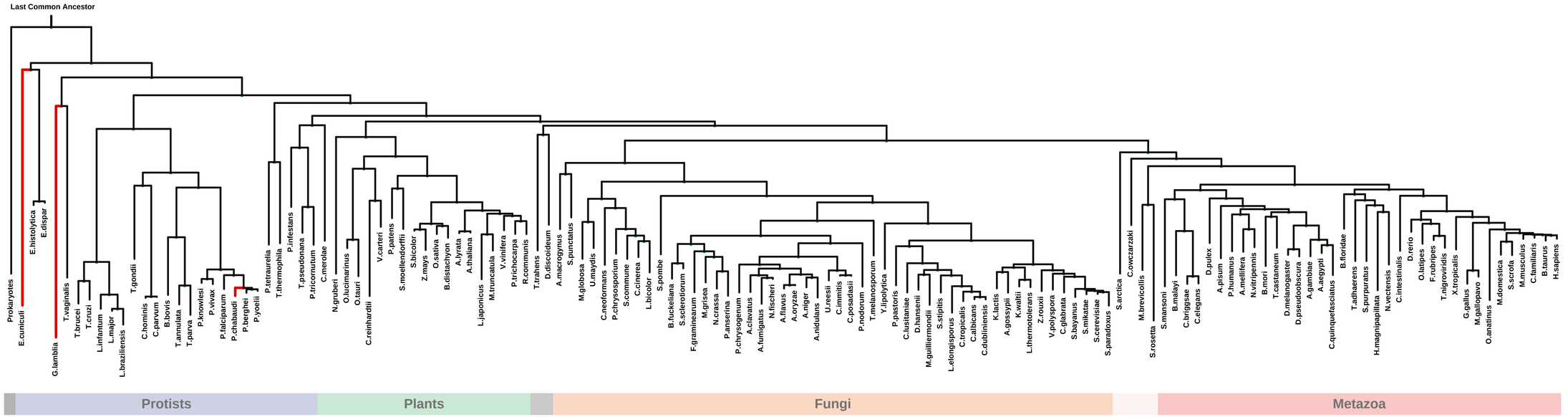


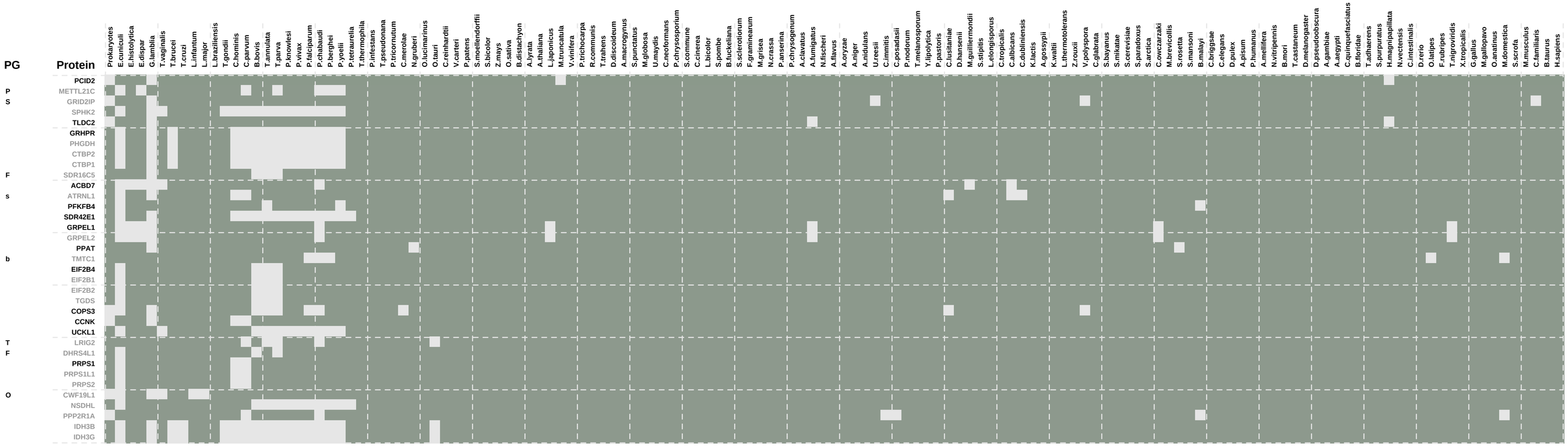


1: cytoplasmic mRNA processing body || 2: tRNA-intron endonuclease complex || 3: cell body fiber || 4: myelin sheath || 5: axon || 6: microtubule cytoskeleton || 7: Golgi lumen || 8: lysosomal lumen || 9: proteinaceous extracellular matrix ||
10: spliceosomal complex || 11: bleb || 12: stress fiber || 13: peroxisome || 14: cytoplasmic vesicle membrane || 15: signalosome || 16: endosome membrane || 17: recycling endosome membrane || 18: eukaryotic translation initiation factor 4F complex ||
19: integral to Golgi membrane || 20: cell cortex

ECM 7, Gene set "basal plasma membrane", Page 14

Num of ECM Genes: 1. Num of Predicted Genes: 500

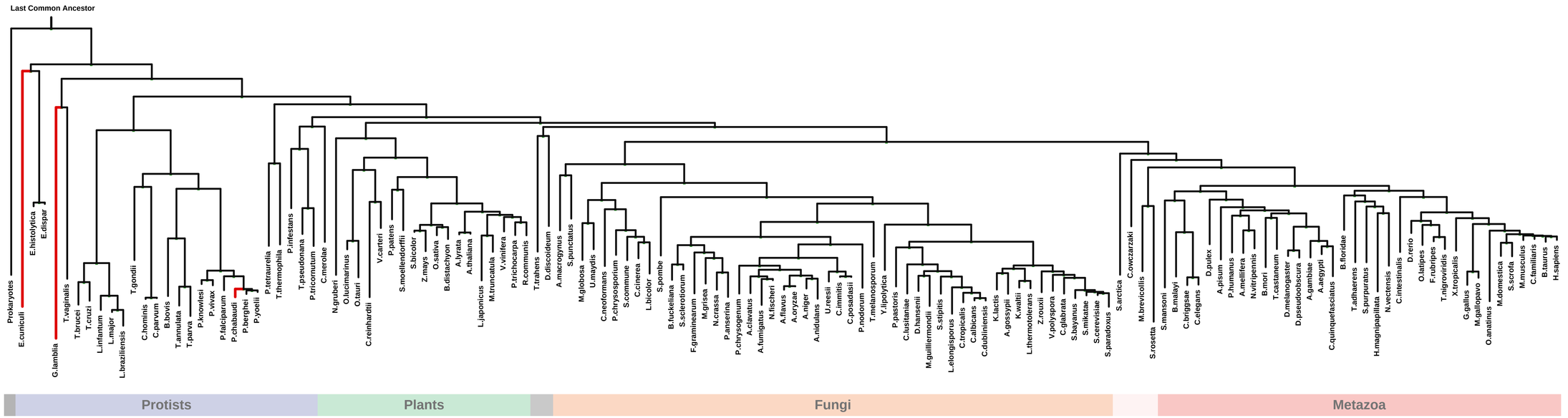


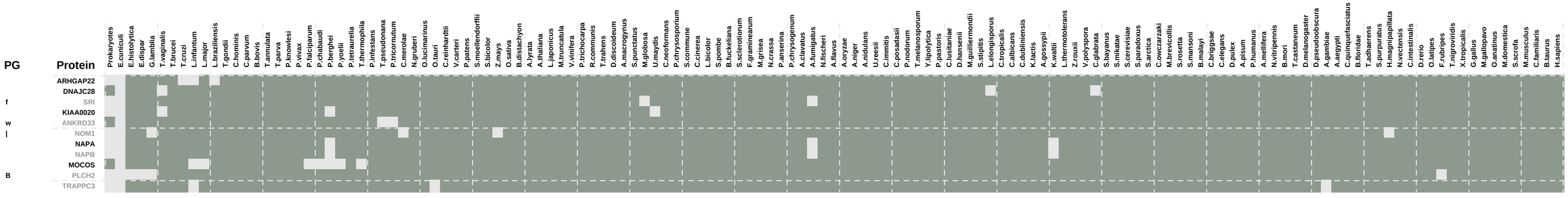


1: postsynaptic membrane || 2: lysosomal membrane || 3: peroxisomal matrix || 4: synapse || 5: transcriptional repressor complex || 6: eukaryotic translation initiation factor 2B complex || 7: eukaryotic translation initiation factor 2 complex ||
8: signalosome || 9: lipid particle || 10: chromosome, centromeric region || 11: microtubule cytoskeleton || 12: protein phosphatase type 2A complex

ECM 7, Gene set "basal plasma membrane", Page 15

Num of ECM Genes: 1. Num of Predicted Genes: 500

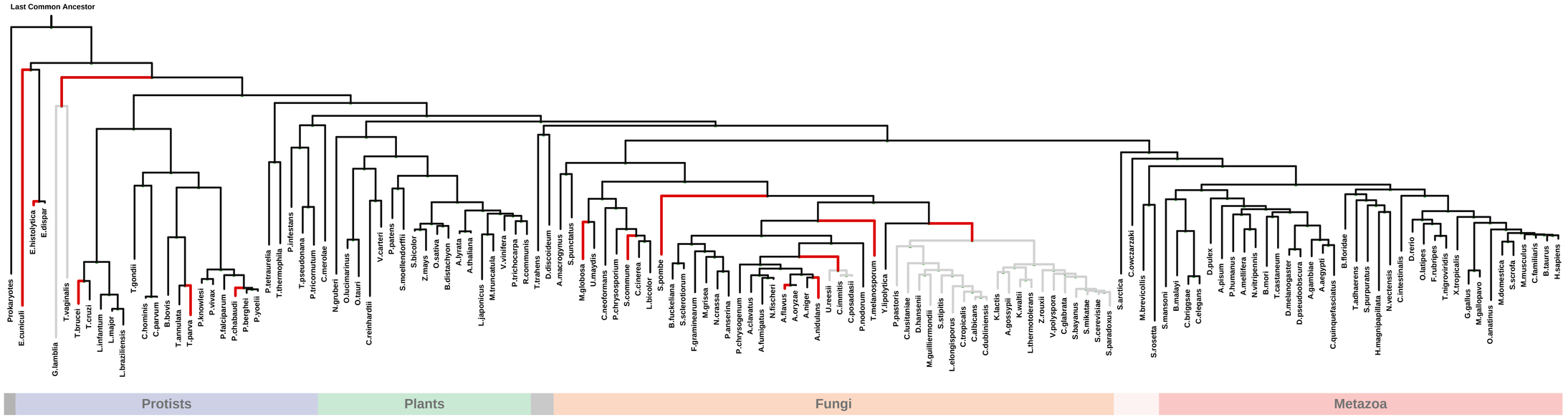


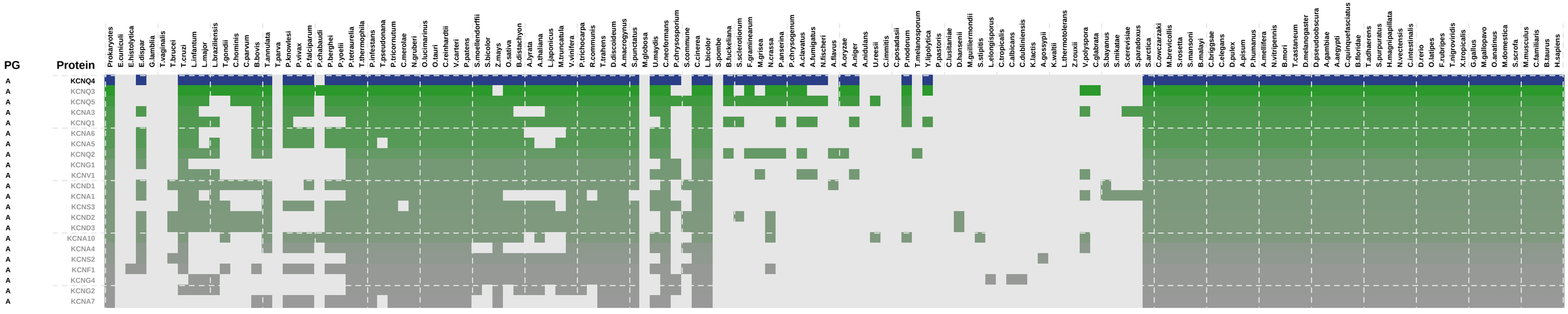


1: sarcoplasmic reticulum membrane || 2: vesicle || 3: Z disc || 4: synaptobrevin 2-SNAP-25-syntaxin-1a complex || 5: TRAPP complex

ECM 8, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 21

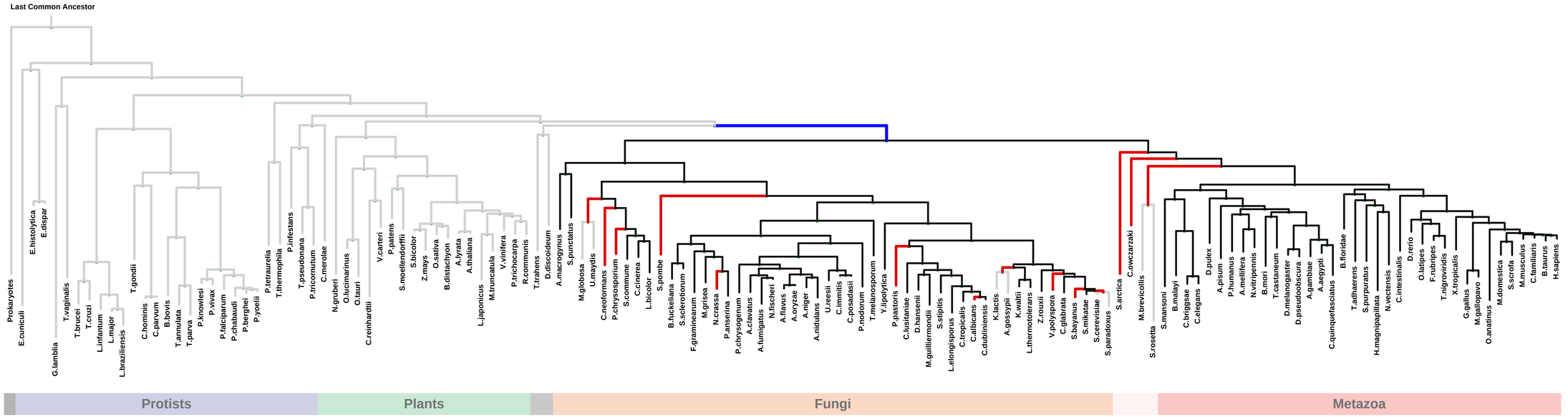


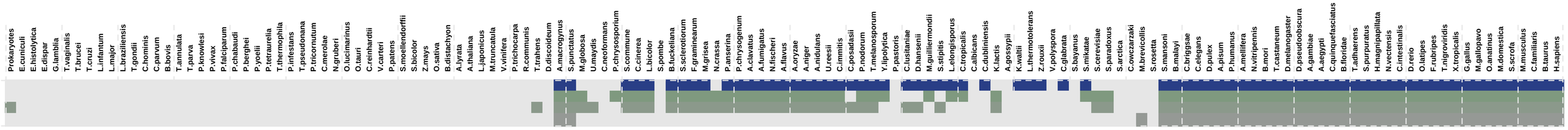


1: basal plasma membrane || 2: neuron projection || 3: voltage-gated potassium channel complex || 4: axon initial segment || 5: node of Ranvier || 6: basolateral plasma membrane || 7: early endosome || 8: late endosome ||
9: lysosome || 10: sarcolemma || 11: zymogen granule membrane || 12: caveola || 13: intercalated disc || 14: membrane raft || 15: dendrite || 16: juxtaparanode region of axon || 17: dendritic spine || 18: postsynaptic density

ECM 9, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 3

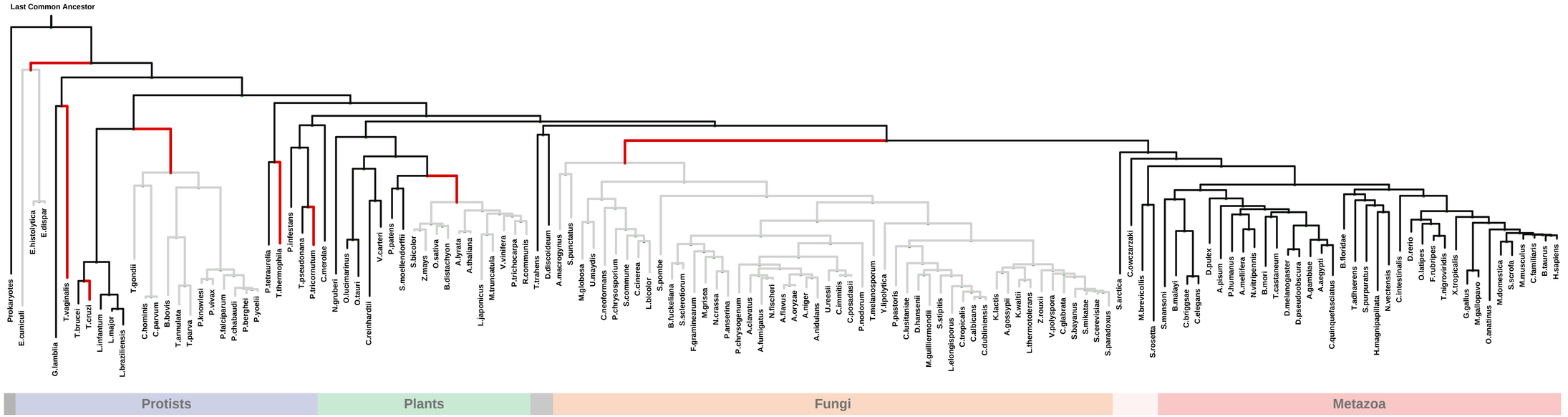


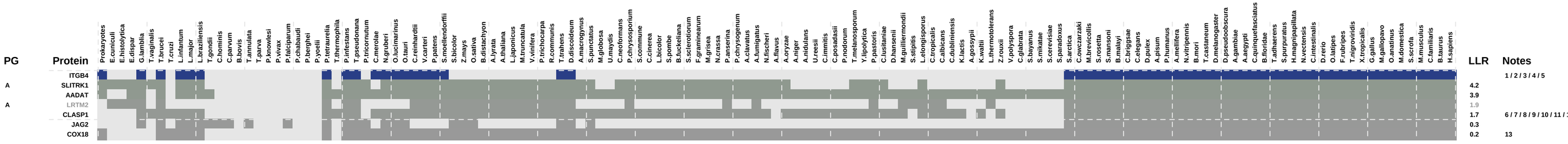


1: basal plasma membrane

ECM 10, Gene set "basal plasma membrane", Page 1

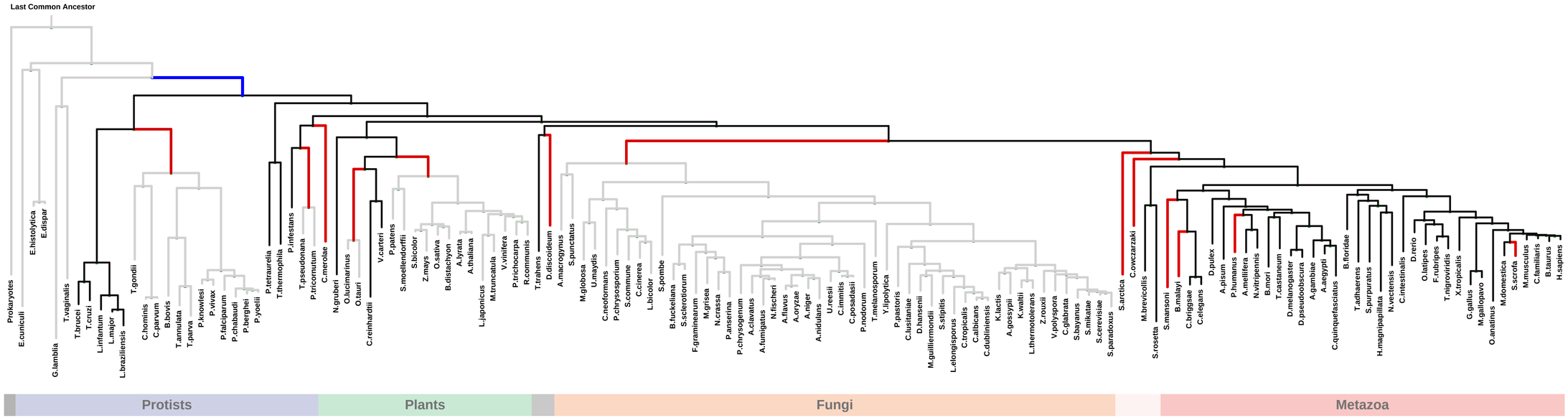
Num of ECM Genes: 1. Num of Predicted Genes: 6

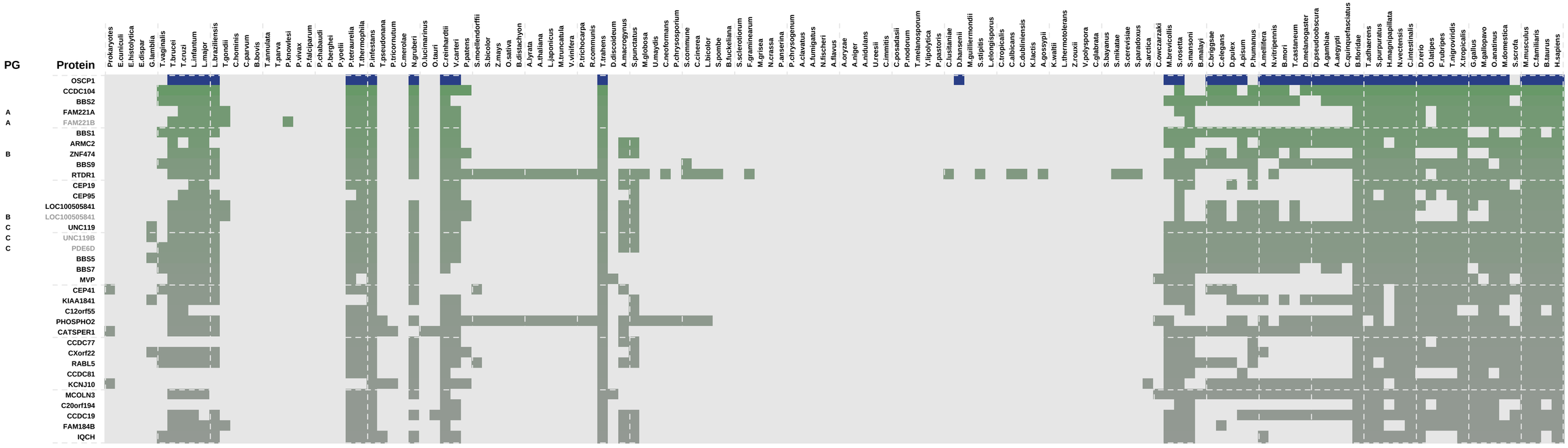




ECM 11, Gene set "basal plasma membrane", Page 1

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

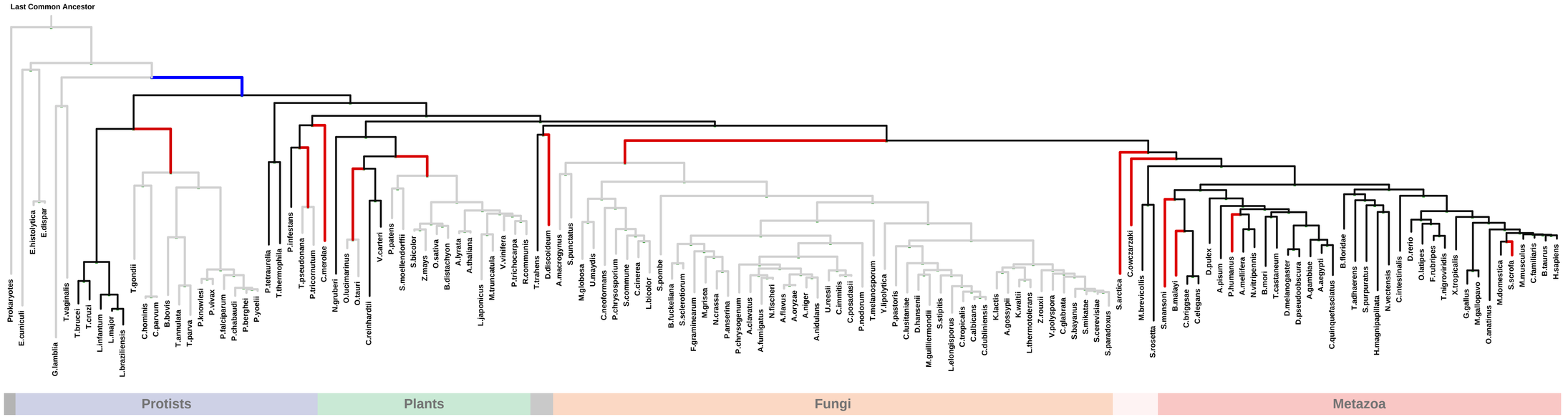


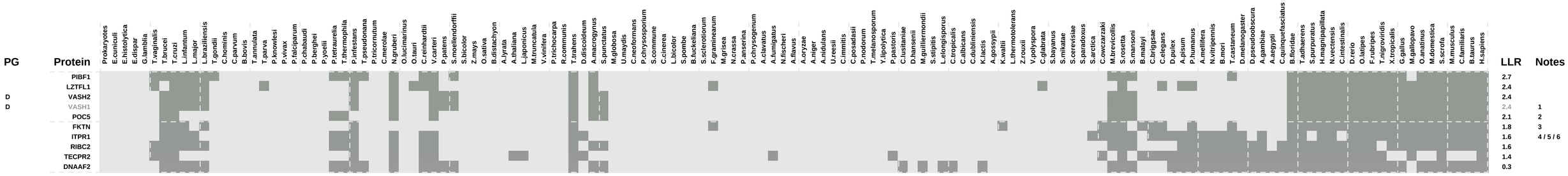


1: basal plasma membrane || 2: BBSome || 3: cilium membrane || 4: microtubule basal body || 5: motile cilium || 6: microtubule organizing center || 7: centriole || 8: spindle pole || 9: ciliary transition zone || 10: nuclear pore || 11: ribonucleoprotein complex || 12: cilium basal body || 13: primary cilium || 14: CatSper complex || 15: cilium || 16: flagellar membrane || 17: basolateral plasma membrane || 18: dystrophin-associated glycoprotein complex || 19: microvillus

ECM 11, Gene set "basal plasma membrane", Page 2

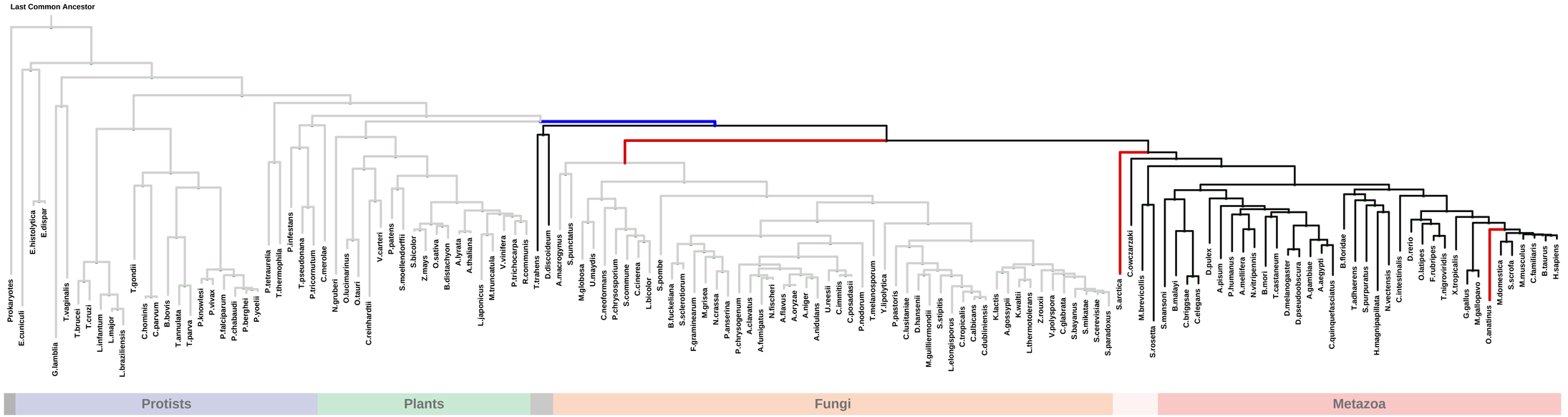
Num of ECM Genes: 1. Num of Predicted Genes: 44

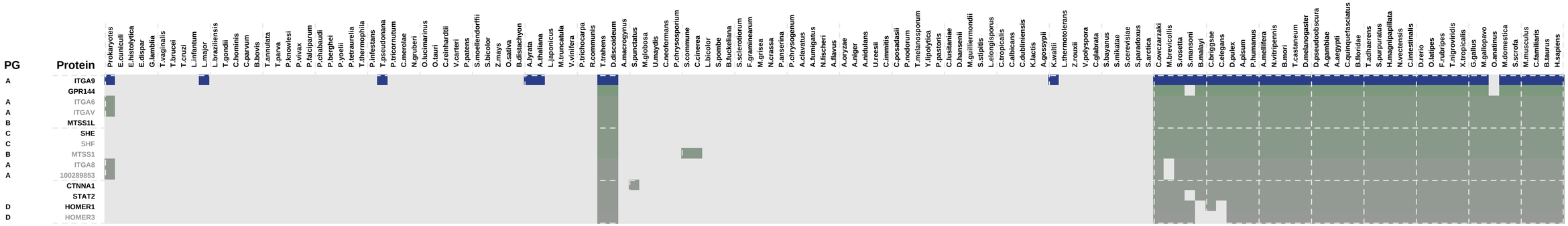




ECM 12, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 13

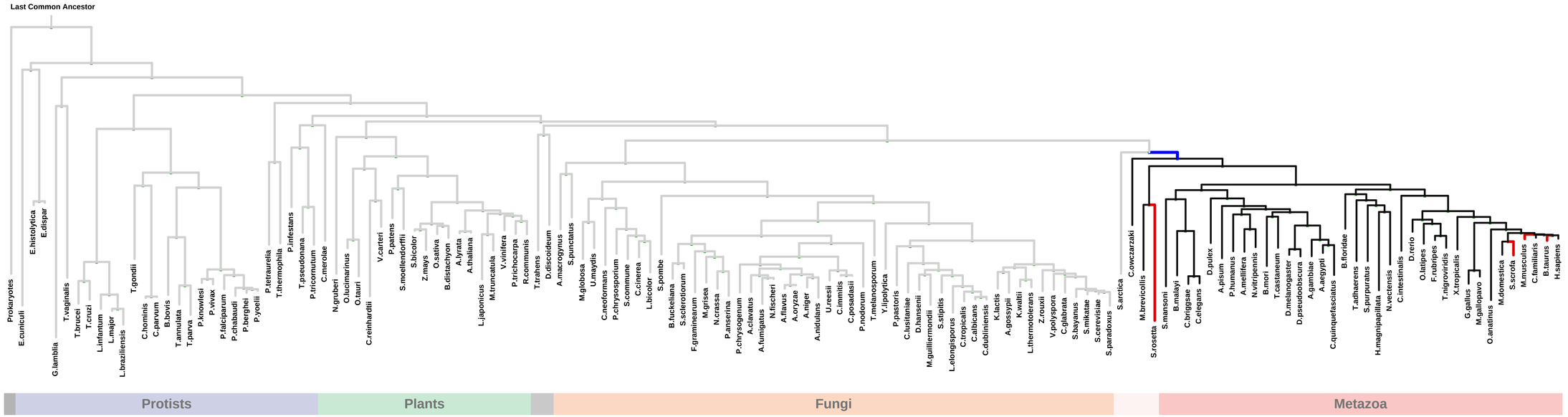


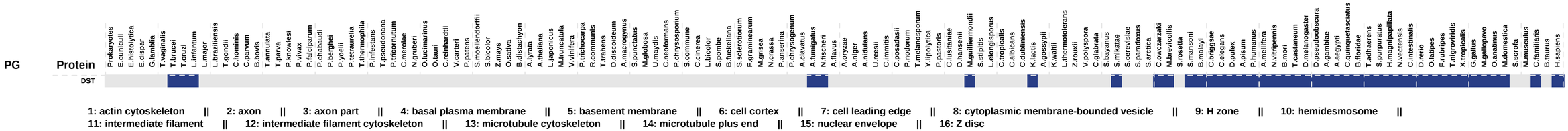


1: alpha9-beta1 integrin complex || 2: basal plasma membrane || 3: integrin complex || 4: external side of plasma membrane || 5: phagocytic vesicle || 6: actin cytoskeleton || 7: endocytic vesicle || 8: ruffle || 9: alpha8-beta1 integrin complex ||
10: apical part of cell || 11: acrosomal vesicle || 12: catenin complex || 13: cell-cell junction || 14: lamellipodium || 15: zonula adherens || 16: costamere || 17: postsynaptic density || 18: postsynaptic membrane || 19: Z disc

ECM 13, Gene set "basal plasma membrane", Page 1

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

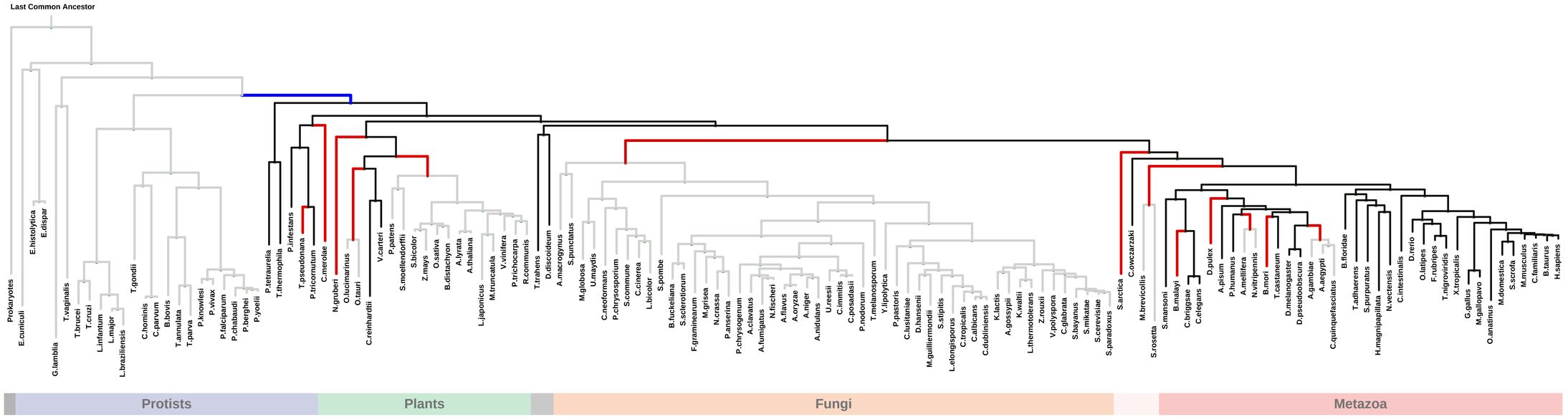


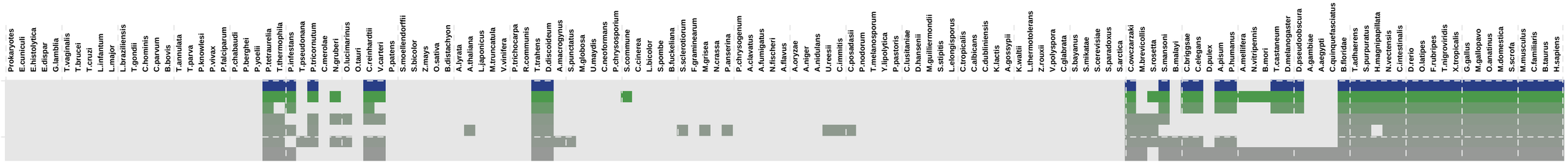


1: actin cytoskeleton || 2: axon || 3: axon part || 4: basal plasma membrane || 5: basement membrane || 6: cell cortex || 7: cell leading edge || 8: cytoplasmic membrane-bounded vesicle || 9: H zone || 10: hemidesmosome ||
11: intermediate filament || 12: intermediate filament cytoskeleton || 13: microtubule cytoskeleton || 14: microtubule plus end || 15: nuclear envelope || 16: Z disc

ECM 14, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 6



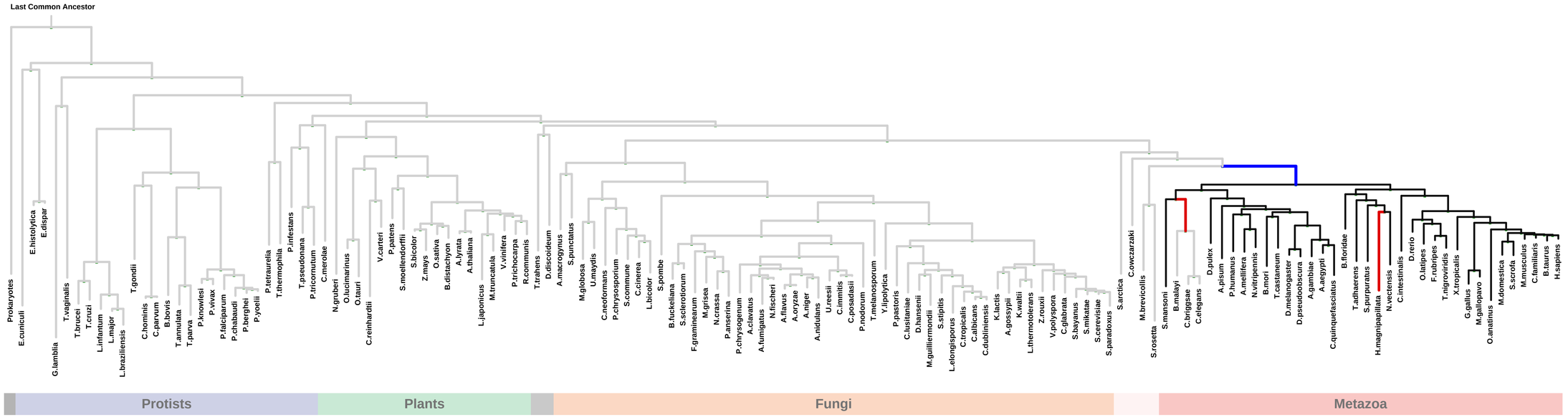


PG	Protein	LLR	Notes
			1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9
A	PKD2		
A	PKD2L1	33.4	
A	PKD2L2	19.9	
B	PKHD1	6.4	10 / 11 / 15 / 16
	NECAB2	4.8	
B	KIAA1199	3.6	
	CD36	1.0	17 / 18 / 19 / 20

1: basal cortex || 2: basal plasma membrane || 3: cell-cell junction || 4: cilium || 5: cilium part || 6: filamentous actin || 7: integral to cytosolic side of endoplasmic reticulum membrane || 8: integral to lumenal side of endoplasmic reticulum membrane ||
9: lamellipodium || 10: microtubule basal body || 11: mitotic spindle || 12: motile primary cilium || 13: nonmotile primary cilium || 14: polycystin complex || 15: anchored to external side of plasma membrane || 16: primary cilium ||
17: external side of plasma membrane || 18: membrane raft || 19: phagocytic vesicle || 20: platelet alpha granule membrane

ECM 15, Gene set "basal plasma membrane", Page 1

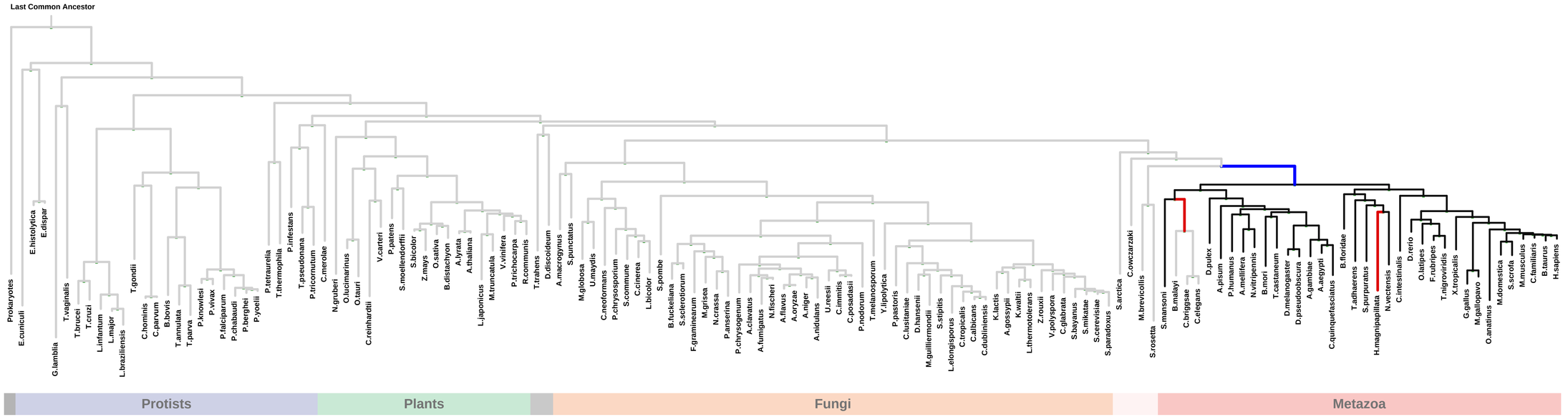
Num of ECM Genes: 1. Num of Predicted Genes: 109



1: basal part of cell || 2: basal plasma membrane || 3: coated pit || 4: cytoplasmic membrane-bounded vesicle || 5: early endosome || 6: endocytic vesicle || 7: endosome membrane || 8: late endosome || 9: recycling endosome ||
10: secretory granule || 11: PML body || 12: condensed chromosome kinetochore || 13: microtubule organizing center || 14: apical part of cell || 15: mitochondrial outer membrane || 16: peroxisomal membrane || 17: COPI vesicle coat

ECM 15, Gene set "basal plasma membrane", Page 2

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

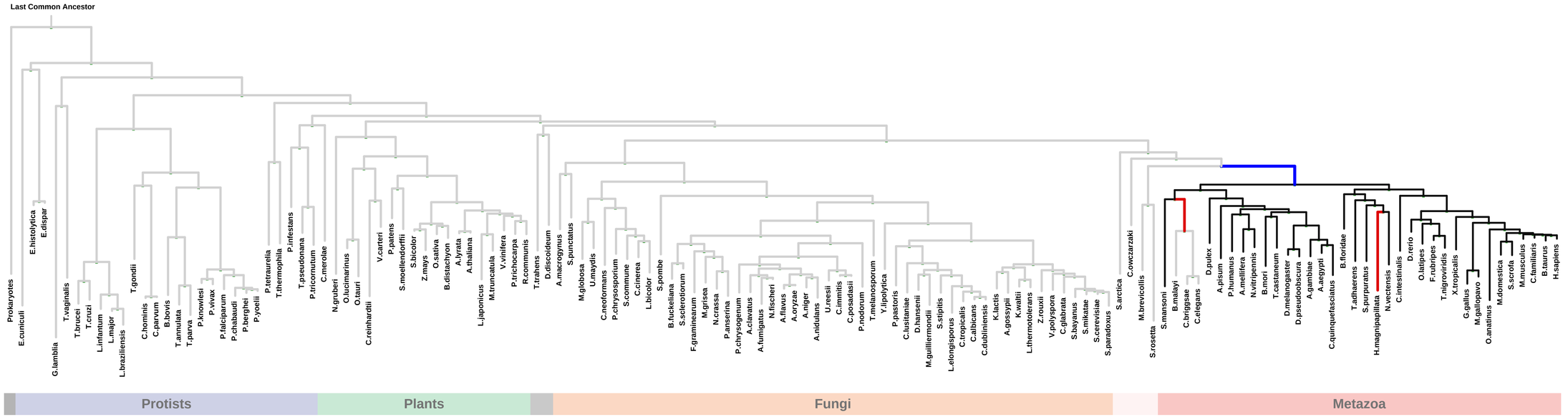


PG	Protein	LLR	Notes
F	TSHZ2	1.7	
	CCDC170	1.7	
A	OR6F1	1.4	
	MED30	1.2	1
B	KIAA1958	1.0	
B	QRICH1	1.0	
A	OR8B8	0.9	
A	OR11H1	0.9	
A	OR2T33	0.8	
	CD274	0.8	2 / 3
	GPR171	0.8	
A	OR2M5	0.7	
F	TSHZ1	0.7	
A	OR4N4	0.7	
A	OR1E2	0.5	
E	ATOH1	0.5	
A	OR1L8	0.5	
A	OR1N2	0.5	
A	OR2A1	0.5	
	GPR27	0.5	
A	OR2A42	0.5	
A	OR2AT4	0.5	
A	OR2B11	0.5	
A	OR2G6	0.5	
A	OR2H2	0.5	
	PTGDR2	0.5	
	GPR61	0.5	
E	ATOH7	0.5	
	ID4	0.5	
A	OR2T29	0.5	
G	BCL7B	0.5	
A	OR2T5	0.5	
A	OR2W1	0.5	
A	OR4A5	0.5	
G	BCL7C	0.5	

1: mediator complex || 2: endomembrane system || 3: external side of plasma membrane

ECM 15, Gene set "basal plasma membrane", Page 3

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

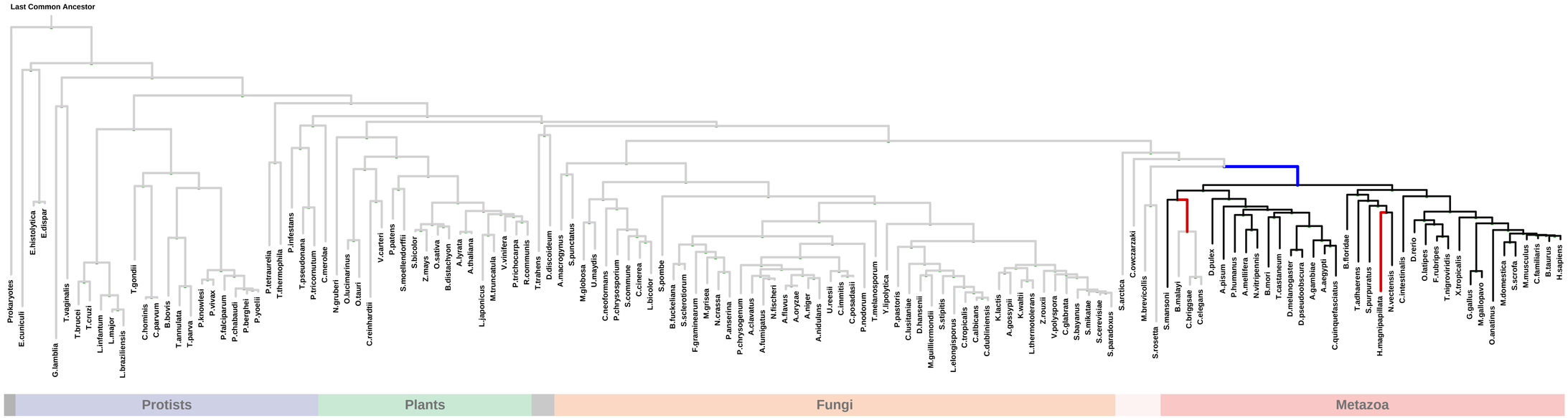


PG	Protein	LLR	Notes
A	OR4C15	0.5	
E	BHLHE22	0.5	
A	OR4D6	0.5	
E	BHLHE23	0.5	
A	OR4K1	0.5	
A	OR4K14	0.5	
A	OR4K17	0.5	
A	OR4L1	0.5	
H	**MC1R**	**0.5**	**1**
	AGER	**0.5**	**2 / 3**
I	**DACH1**	**0.5**	
	MRPS30	**0.5**	**4**
E	MSC	0.5	
E	MSGN1	0.5	
	NEURL2	**0.5**	**5 / 6**
E	NEUROD6	0.5	
A	OR9A2	0.5	
	NTSR2	**0.5**	
E	OLIG1	0.5	
E	OLIG2	0.5	
E	OLIG3	0.5	
	RUNDC1	**0.5**	
H	S1PR4	0.5	
H	S1PR5	0.5	
A	OR10A6	0.5	
J	**SEMA4G**	**0.5**	
J	SEMA7A	0.5	**7 / 8**
I	DACH2	0.5	
A	OR11A1	0.5	
	TFAP2D	**0.5**	
	TPM2	**0.5**	**9**
A	OR11G2	0.5	
	EDNRA	**0.5**	**10 / 11 / 12**
A	OR13J1	0.5	
A	OR14I1	0.5	

1: microtubule cytoskeleton || 2: axon || 3: basal plasma membrane || 4: ribosome || 5: muscle tendon junction || 6: VCB complex || 7: anchored to membrane || 8: external side of plasma membrane || 9: muscle thin filament tropomyosin || 10: membrane raft || 11: nuclear membrane || 12: T-tubule

ECM 15, Gene set "basal plasma membrane", Page 4

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

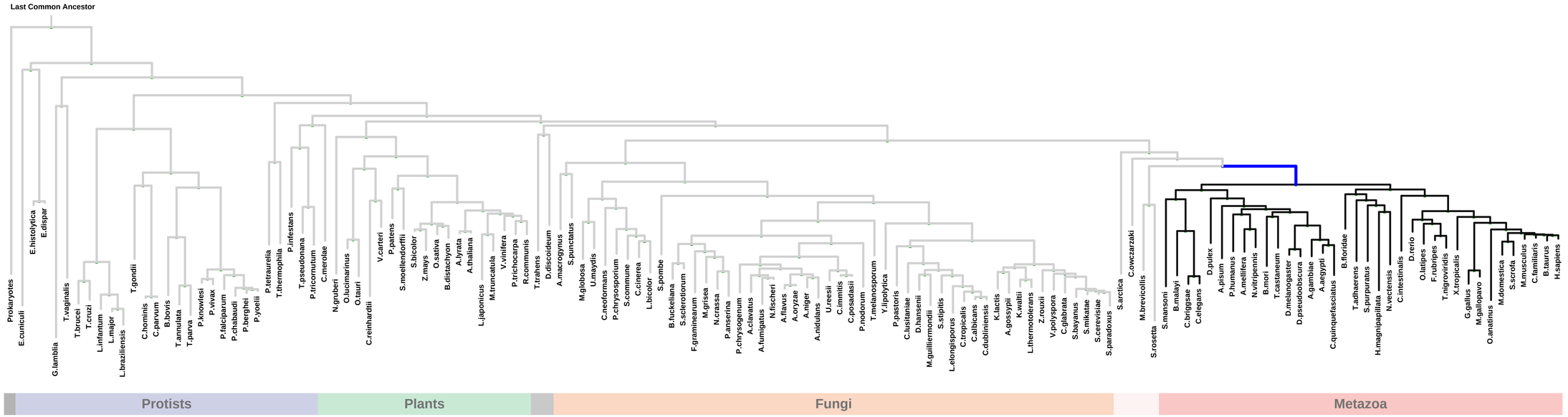


PG	Protein	LLR	Notes
A	OR1E1	0.5	
	CDC42EP1	0.5	1 / 2
	TNNT3	0.4	3
	COL16A1	0.2	4
	DAXX	0.2	5 / 6 / 7 / 8 / 9 / 10

1: actin cytoskeleton || 2: endomembrane system || 3: troponin complex || 4: endoplasmic reticulum lumen || 5: cell body || 6: cell cortex || 7: chromosome, centromeric region || 8: heterochromatin || 9: neuron projection || 10: PML body

ECM 16, Gene set "basal plasma membrane", Page 1

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

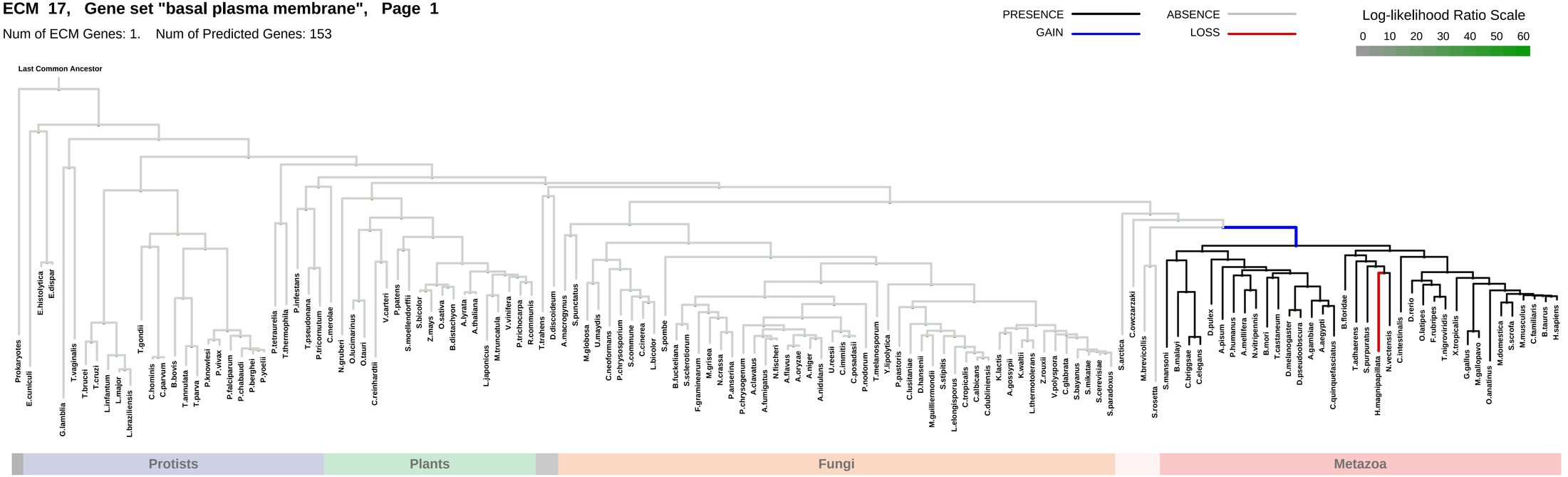


PG	Protein	LLR	Notes
	ANK3		1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9

1: axon initial segment || 2: basal plasma membrane || 3: basolateral plasma membrane || 4: costamere || 5: intercalated disc || 6: lateral plasma membrane || 7: lysosome || 8: node of Ranvier || 9: postsynaptic membrane ||
10: sarcolemma || 11: spectrin-associated cytoskeleton || 12: tight junction || 13: T-tubule

ECM 17, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 153

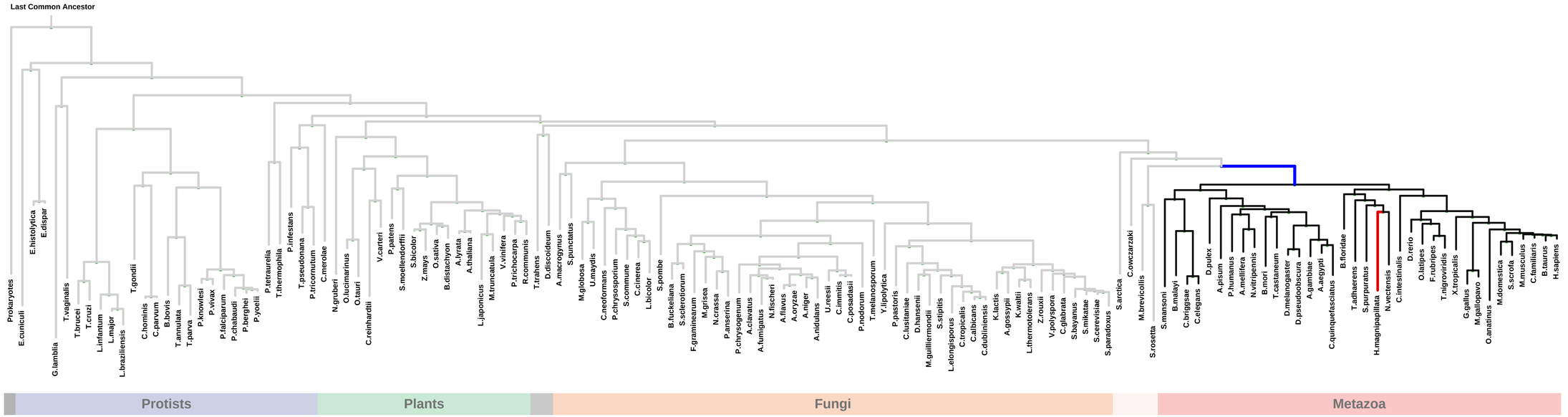


PG	Protein	LLR	Notes
	AGER		1 / 2
A	ATOH1	4.8	
A	ATOH7	4.8	
B	BCL7B	4.8	
B	BCL7C	4.8	
A	BHLHE22	4.8	
A	BHLHE23	4.8	
C	DACH1	4.8	
C	DACH2	4.8	
D	EDNRA	4.8	3 / 4 / 5
	GPR27	4.8	
D	PTGDR2	4.8	
	GPR61	4.8	
	ID4	4.8	
E	MC1R	4.8	6
	MRPS30	4.8	7
A	MSC	4.8	
A	MSGN1	4.8	
	NEUROL2	4.8	8 / 9
A	NEUROD6	4.8	
	NTSR2	4.8	
A	OLIG1	4.8	
A	OLIG2	4.8	
A	OLIG3	4.8	
E	OR10A6	4.8	
E	OR11A1	4.8	
E	OR11G2	4.8	
E	OR13J1	4.8	
E	OR14I1	4.8	
E	OR1E1	4.8	
E	OR1E2	4.8	
E	OR1L8	4.8	
E	OR1N2	4.8	
E	OR2A1	4.8	
E	OR2A42	4.8	

1: axon || 2: basal plasma membrane || 3: membrane raft || 4: nuclear membrane || 5: T-tubule || 6: microtubule cytoskeleton || 7: ribosome || 8: muscle tendon junction || 9: VCB complex

ECM 17, Gene set "basal plasma membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 153

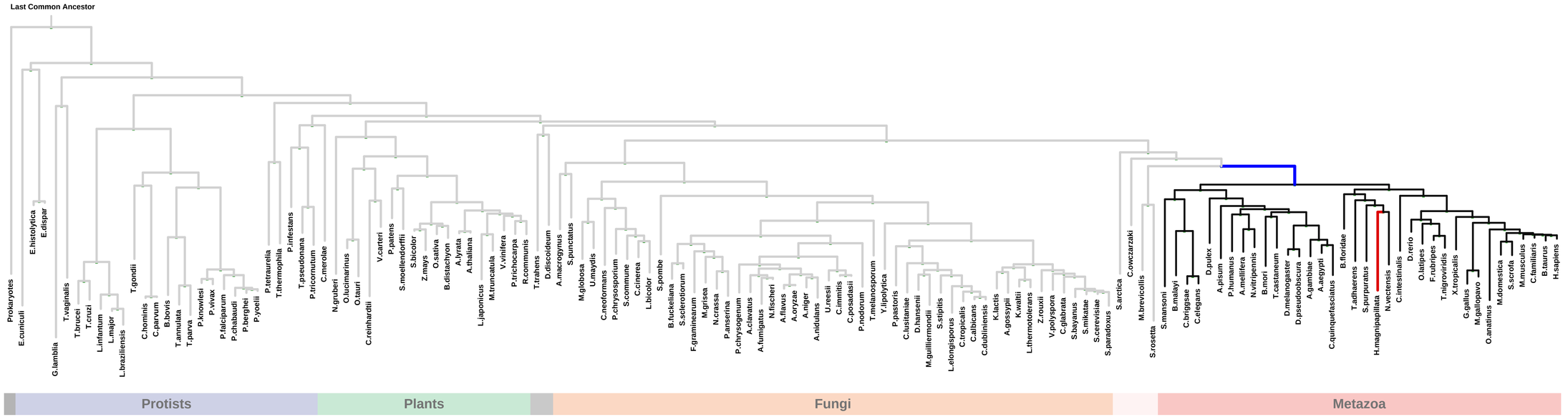


PG	Protein	LLR	Notes
E	OR2AT4	4.8	
E	OR2B11	4.8	
E	OR2G6	4.8	
E	OR2H2	4.8	
E	OR2T29	4.8	
E	OR2T5	4.8	
E	OR2W1	4.8	
E	OR4A5	4.8	
E	OR4C15	4.8	
E	OR4D6	4.8	
E	OR4K1	4.8	
E	OR4K14	4.8	
E	OR4K17	4.8	
E	OR4L1	4.8	
E	OR9A2	4.8	
	RUNDC1	**4.8**	
E	S1PR4	4.8	
E	S1PR5	4.8	
F	**SEMA4G**	**4.8**	
F	SEMA7A	4.8	**1 / 2**
	TFAP2D	**4.8**	
	TPM2	**4.8**	**3**
F	SEMA6B	4.0	
	CD200	**2.6**	
E	OR4P4	2.1	
	KAL1	**2.1**	**4**
G	**LOC644100**	**1.3**	
G	ARL14EPL	1.3	
E	OR13A1	1.3	
E	OR2C3	1.3	
E	OR2F1	1.3	
E	OR2F2	1.3	
E	OR13G1	1.3	
E	OR10A5	1.3	
E	OR2L2	1.3	

1: anchored to membrane || 2: external side of plasma membrane || 3: muscle thin filament tropomyosin || 4: proteinaceous extracellular matrix

ECM 17, Gene set "basal plasma membrane", Page 3

Num of ECM Genes: 1. Num of Predicted Genes: 153

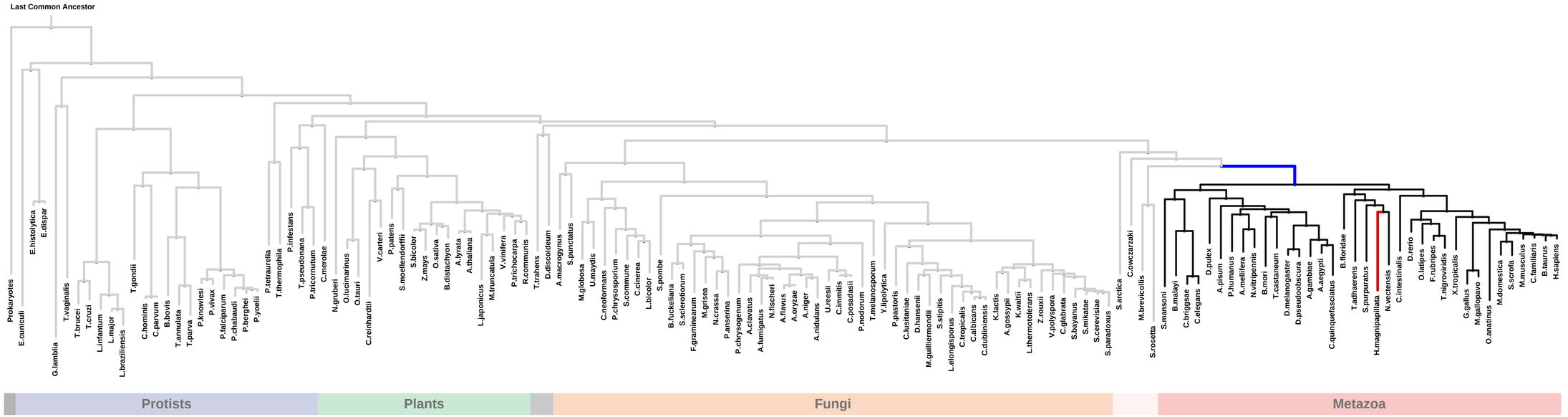


PG	Protein	LLR	Notes
E	OR14A16	1.3	
D	FFAR4	1.3	1
E	OR2T8	1.3	
E	OR14J1	1.3	
E	OR3A1	1.3	
E	OR3A3	1.3	
E	OR1A1	1.3	
E	OR4C13	1.3	
E	OR1C1	1.3	
E	OR4D5	1.3	
E	OR1D5	1.3	
E	OR4E2	1.3	
E	OR4F16	1.3	
E	OR4F21	1.3	
E	OR4F29	1.3	
E	OR4F3	1.3	
E	OR4F6	1.3	
E	OR10J1	1.3	
E	OR10Q1	1.3	
E	OR1G1	1.3	
E	OR10V1	1.3	
E	OR4M2	1.3	
E	OR1N1	1.3	
E	OR4Q3	1.3	
E	OR51A7	1.3	
E	OR51E1	1.3	
E	OR51E2	1.3	
E	OR51I1	1.3	
E	OR51I2	1.3	
E	OR51L1	1.3	
E	OR51T1	1.3	
E	OR51V1	1.3	
E	OR52B2	1.3	
E	OR52E4	1.3	
E	OR52E8	1.3	

1: endocytic vesicle

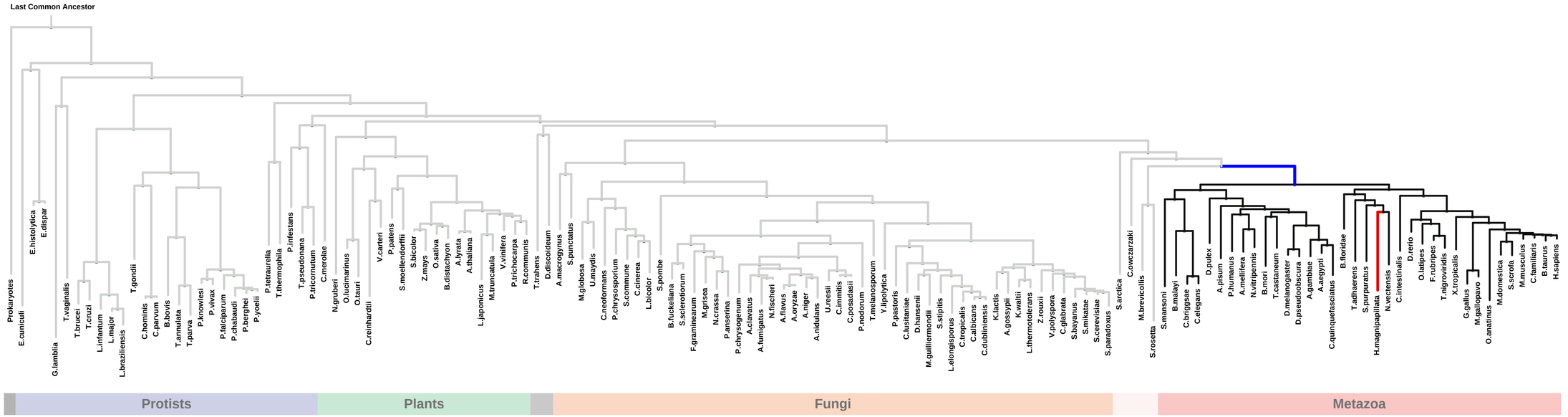
ECM 17, Gene set "basal plasma membrane", Page 4

Num of ECM Genes: 1. Num of Predicted Genes: 153



ECM 17, Gene set "basal plasma membrane", Page 5

Num of ECM Genes: 1. Num of Predicted Genes: 153

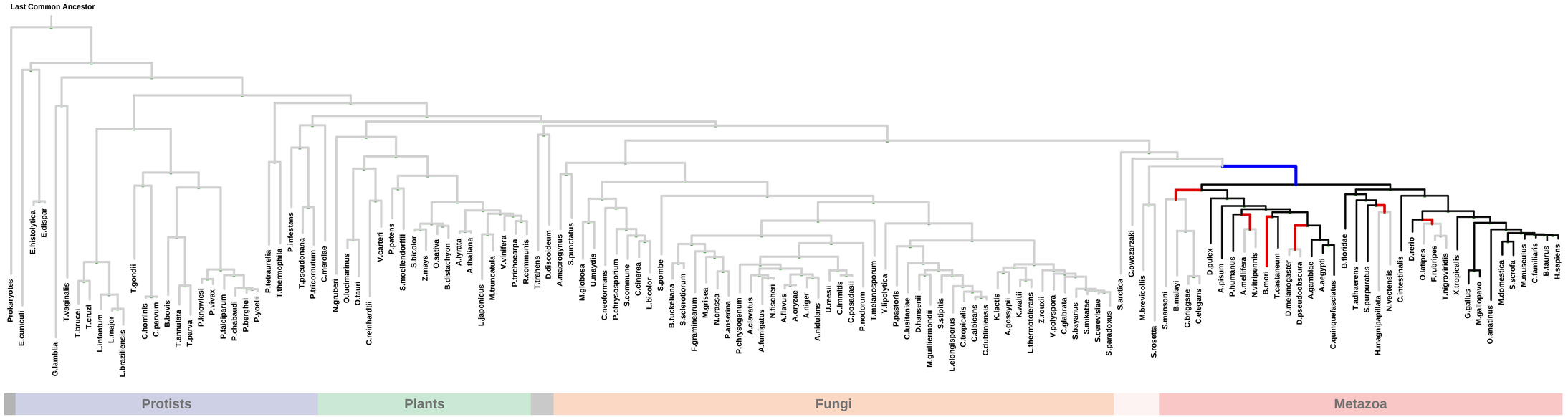


PG	Protein	LLR	Notes
H	HEY1	0.9	
A	TCF24	0.9	
	ZMYM3	0.9	
D	GPR31	0.6	
H	HES7	0.6	
E	OR2T1	0.6	
	BHLHA9	0.6	
	PLXNA4	0.6	1
I	SATB2	0.4	2 / 3
I	SATB1	0.4	3 / 4 / 5
E	OR4B1	0.4	
E	OR2A14	0.4	
J	100510232	0.3	
J	100510323	0.3	

1: semaphorin receptor complex || 2: histone deacetylase complex || 3: nuclear matrix || 4: nuclear heterochromatin || 5: PML body

ECM 18, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 26

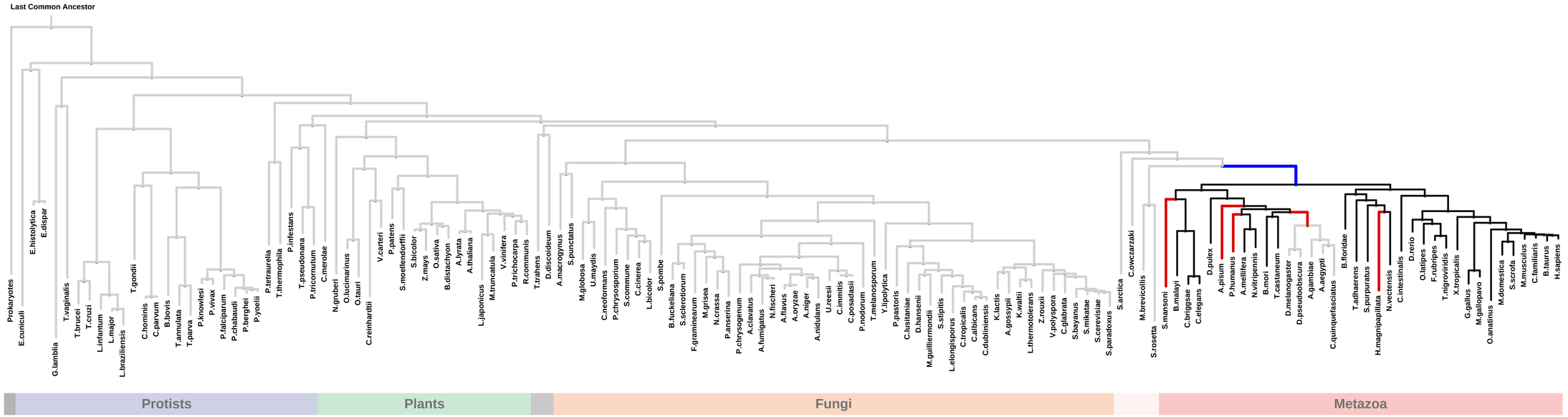


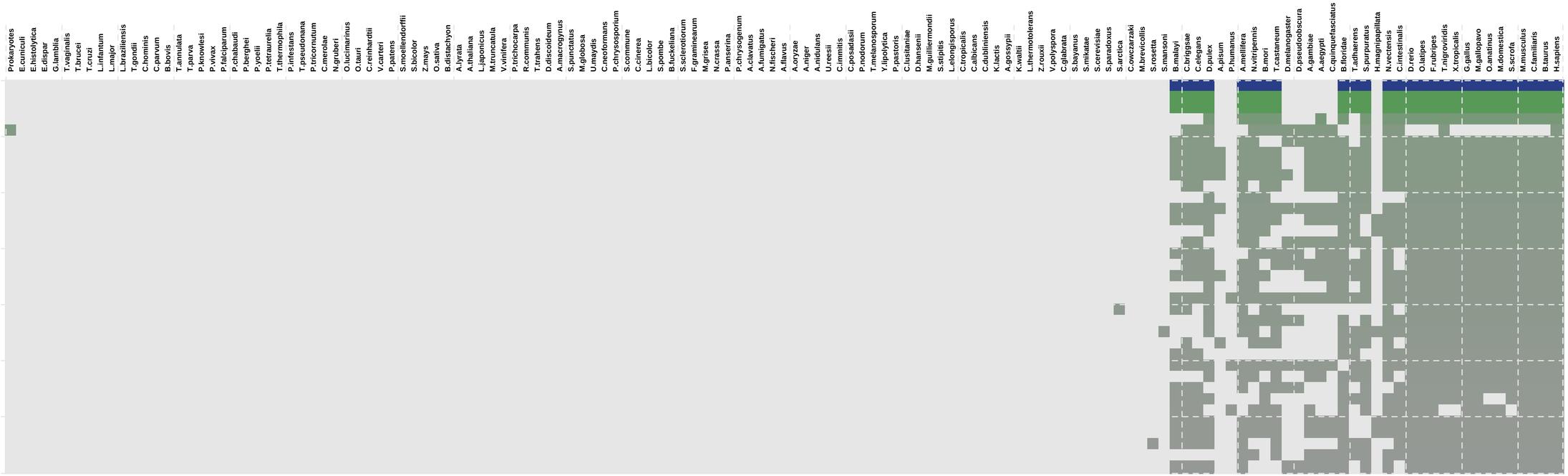
PG	Protein	LLR	Notes
	CLCA2		1
	TICAM2	9.6	2
	FASTKD2	9.6	
	SMIM20	6.6	
	C2CD2L	6.5	
	EBI3	6.5	
	PKIB	6.4	
	PCP2	4.7	
	LILRA3	4.6	
	N4BP3	4.2	3
	GORAB	3.8	
	LYSMD2	3.4	
	GOLIM4	3.0	2 / 4 / 5 / 6 / 7
A	OR11L1	2.8	
	VEGFB	2.7	8
A	OR6B2	2.5	
A	OR6B3	2.5	
	AKAP6	2.4	9 / 10 / 11 / 12
	NCR3LG1	1.9	13
B	GFRA1	1.5	14 / 15
B	GFRA3	1.5	14 / 15 / 16
	FAM195A	0.7	
	MED9	0.7	17
	RASSF10	0.7	18 / 19
C	COBLL1	0.2	
C	COBL	0.2	20 / 21 / 22 / 23 / 24 / 25 /
	C6orf203	0.2	

1: basal plasma membrane || 2: endosome membrane || 3: cytoplasmic vesicle membrane || 4: cis-Golgi network || 5: endocytic vesicle || 6: Golgi cisterna membrane || 7: Golgi lumen || 8: platelet alpha granule lumen || 9: calcium channel complex ||
10: nuclear envelope || 11: nuclear outer membrane || 12: sarcoplasmic reticulum || 13: viral capsid || 14: anchored to membrane || 15: extrinsic to membrane || 16: external side of plasma membrane || 17: mediator complex ||
18: microtubule organizing center || 19: spindle pole || 20: actin filament || 21: axon || 22: axonal growth cone || 23: cell cortex || 24: dendrite || 25: dendritic growth cone || 26: ruffle

ECM 19, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 46



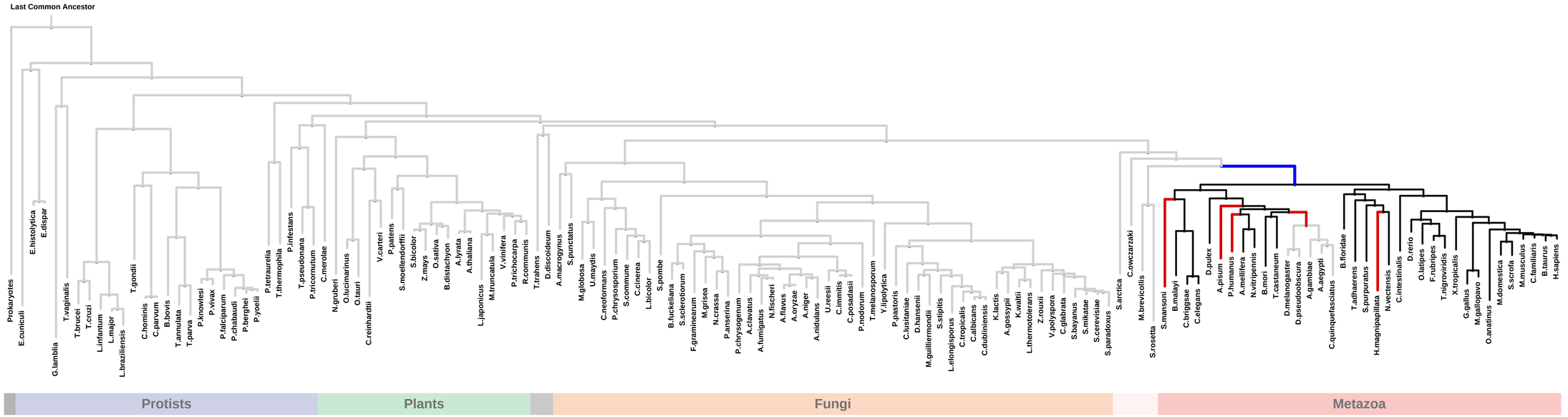


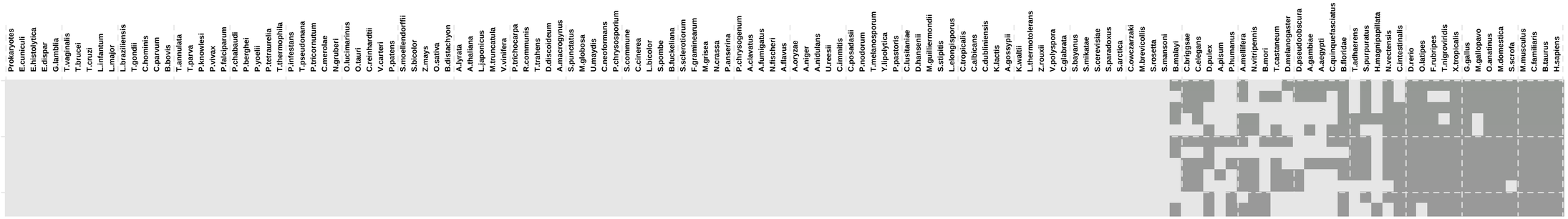
PG	Protein	LLR	Notes
A	CAV1		1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9
A	CAV2	27.9	1 / 4 / 11 / 12 / 13 / 14
A	CAV3	27.9	4 / 12 / 15 / 16 / 17 / 18 / 1
	IGFBP4	14.1	
	100510027	9.4	
B	FAM69A	7.9	
C	PLA2G2E	7.8	
C	PLA2G2D	7.8	
C	PLA2G2A	7.5	20
D	OR5C1	7.4	
	KTN1	7.0	
C	PLA2G10	6.6	
	PRX	6.4	21
	GLCCI1	6.1	
D	OR51B6	5.8	
	VTCN1	5.7	
D	OR51F1	5.6	
C	OC90	5.6	
	SLC7A6OS	5.5	
D	OR2Y1	5.2	
	CST3	5.2	22 / 23 / 24 / 25 / 26 / 27 /
	SYNM	4.6	29 / 30 / 31 / 32
	CBY1	3.8	33 / 34 / 35
D	OR10X1	3.7	
	FAM65A	3.4	
	ATG13	3.3	36 / 37
	C16orf87	2.9	
	CD80	2.7	38
	MYD88	2.5	39
	C3orf33	2.2	
E	CRTAP	2.1	40 / 41
E	LEPREL4	2.1	42 / 43
	TMEM98	1.9	
D	OR5AS1	1.8	
B	FAM69B	1.6	

1: acrosomal membrane || 2: basal plasma membrane || 3: basolateral plasma membrane || 4: caveola || 5: cell cortex || 6: cytoplasmic vesicle || 7: endocytic vesicle membrane || 8: endosome || 9: flagellum || 10: focal adhesion ||
11: lipid particle || 12: membrane raft || 13: extrinsic to internal side of plasma membrane || 14: transport vesicle || 15: dystrophin-associated glycoprotein complex || 16: neuromuscular junction || 17: sarcolemma || 18: T-tubule ||
19: Z disc || 20: secretory granule || 21: myelin sheath || 22: axon part || 23: basement membrane || 24: contractile fiber || 25: lysosome || 26: multivesicular body || 27: nuclear membrane || 28: vesicle || 29: adherens junction ||

ECM 19, Gene set "basal plasma membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 46

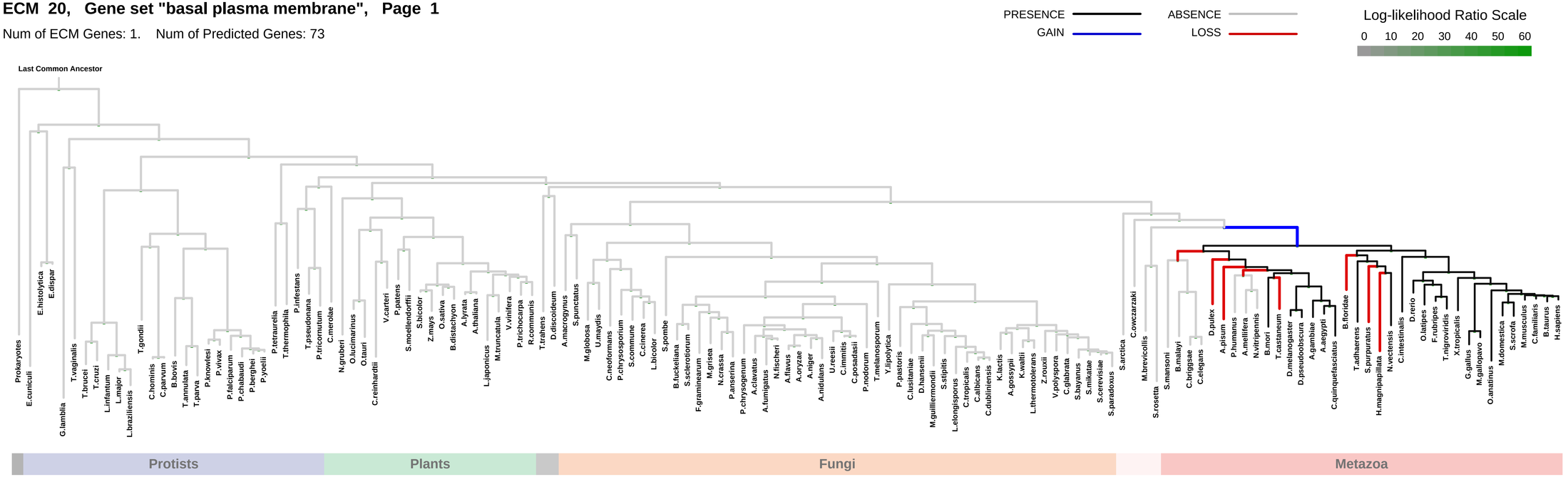


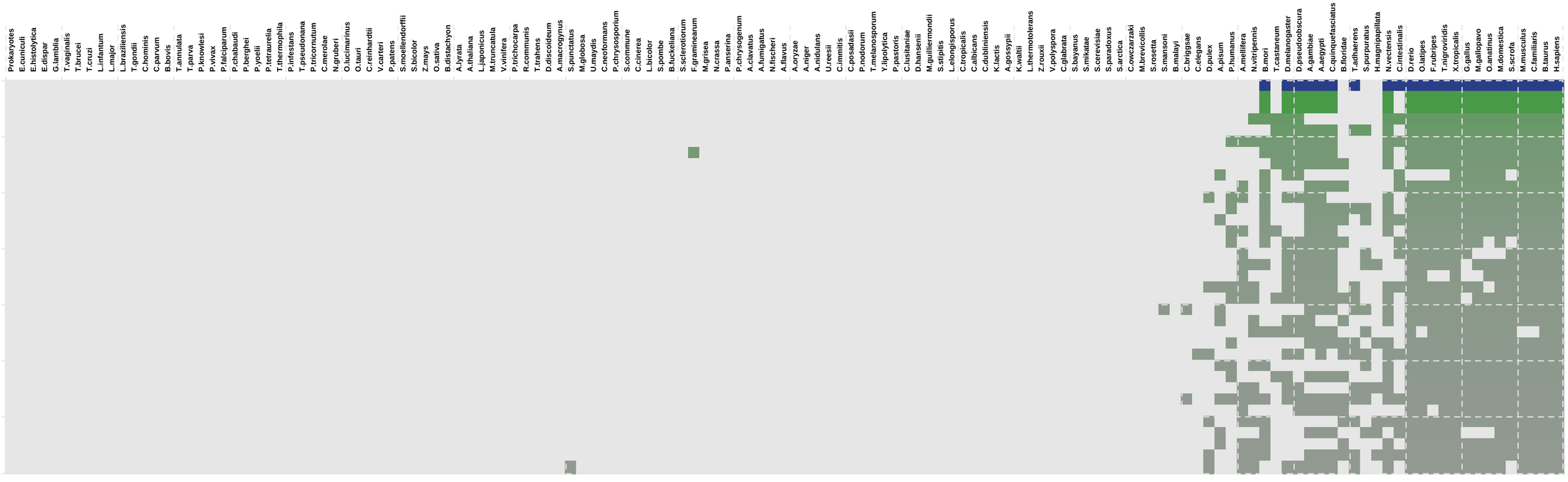


1: chromosome, telomeric region || 2: nuclear telomere cap complex || 3: Cajal body || 4: SMN complex || 5: spliceosomal complex || 6: Cul4-RING ubiquitin ligase complex || 7: cytoplasmic vesicle membrane || 8: compact myelin ||
9: membrane raft

ECM 20, Gene set "basal plasma membrane", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 73



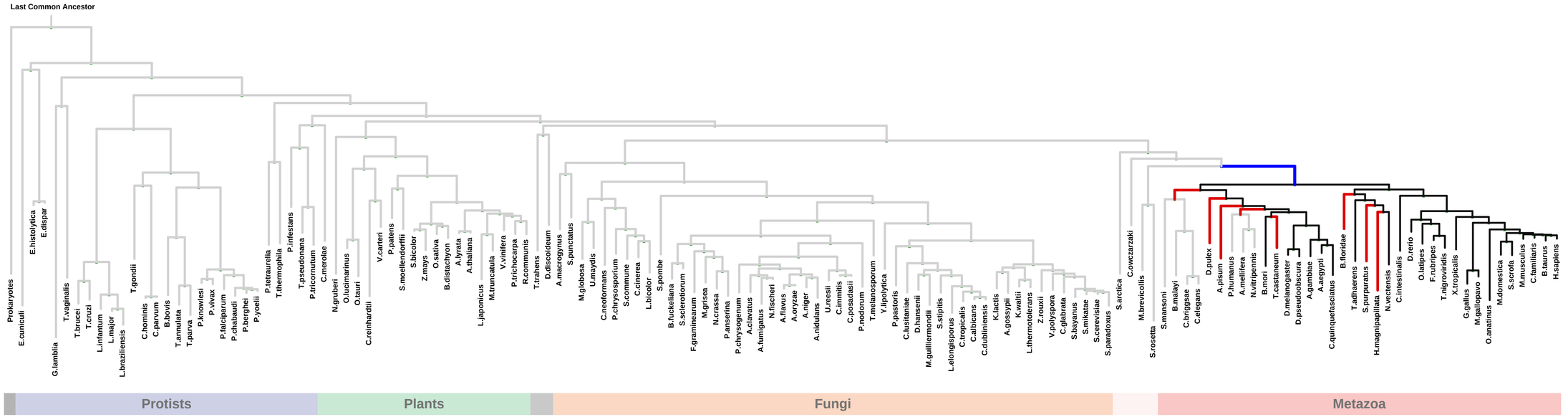


PG	Protein	LLR	Notes
	TACSTD2		1 / 2
A	GADD45A	34.5	
A	GADD45B	34.5	
	RILP	21.2	3 / 4 / 5 / 6 / 7
	YAF2	20.3	
	PPP1R15A	15.5	
A	GADD45G	15.4	
	ITFG3	14.6	
	MSANTD3	13.5	
B	CT45A5	12.7	
C	BCL9	10.9	
D	OR52K2	10.3	
D	OR4C46	9.6	
C	BCL9L	8.0	
	TMEM169	7.7	
	COA3	7.5	8
	TESPA1	6.9	9
	ARL6IP6	6.7	
	FAM162A	6.3	
	KIAA0825	6.2	
E	FCGR3A	6.2	10
	MRGPRX3	6.1	
	NDUFB1	5.8	11
	FBXO5	5.7	12
	LYSMD4	5.2	
	CDKN2AIP	4.7	13
D	OR10T2	4.6	
	INIP	4.4	14
D	OR6A2	4.4	
	NDUFA1	4.3	8 / 11
F	GLCCI1	4.0	
G	EPM2AIP1	3.8	
D	OR5AP2	3.6	
F	FAM117B	3.5	
	BRAT1	3.5	

1: basal plasma membrane || 2: lateral plasma membrane || 3: late endosome || 4: late endosome membrane || 5: lysosomal membrane || 6: lysosome || 7: phagocytic vesicle membrane || 8: mitochondrial membrane || 9: signalosome ||
10: external side of plasma membrane || 11: mitochondrial respiratory chain complex I || 12: spindle || 13: granular component || 14: SOSS complex

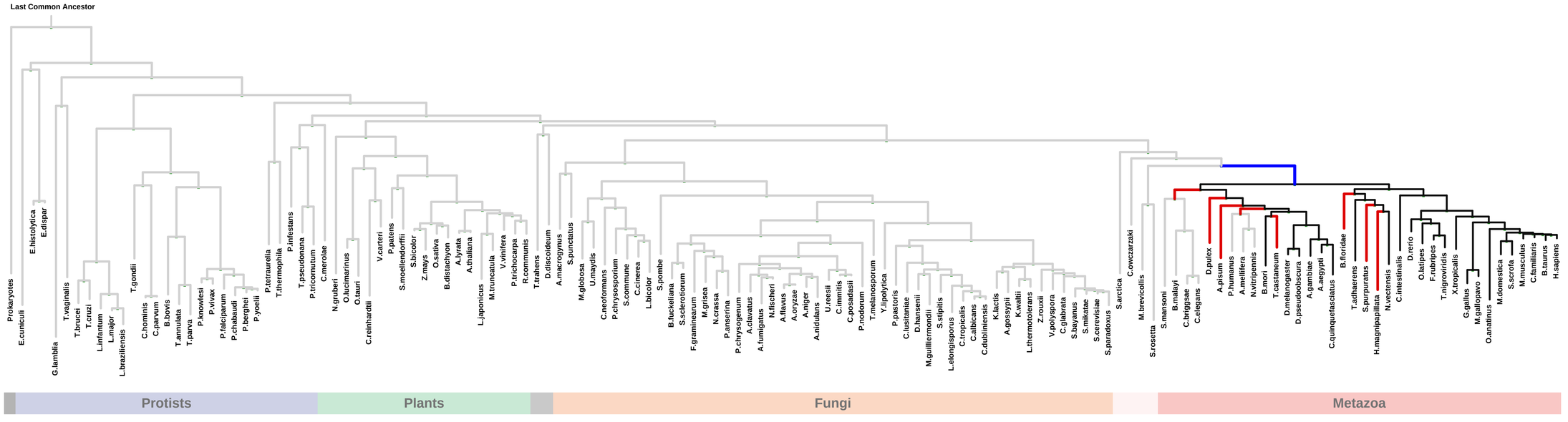
ECM 20, Gene set "basal plasma membrane", Page 2

Num of ECM Genes: 1. Num of Predicted Genes: 73



ECM 20, Gene set "basal plasma membrane", Page 3

Num of ECM Genes: 1. Num of Predicted Genes: 73



PG	Protein	LLR	Notes
	FAM65A	0.2	
	IGSF5	0.2	1
I	TNFSF12-TNFSF13	0.0	
I	TNFSF13	0.0	2

1: tight junction || 2: external side of plasma membrane

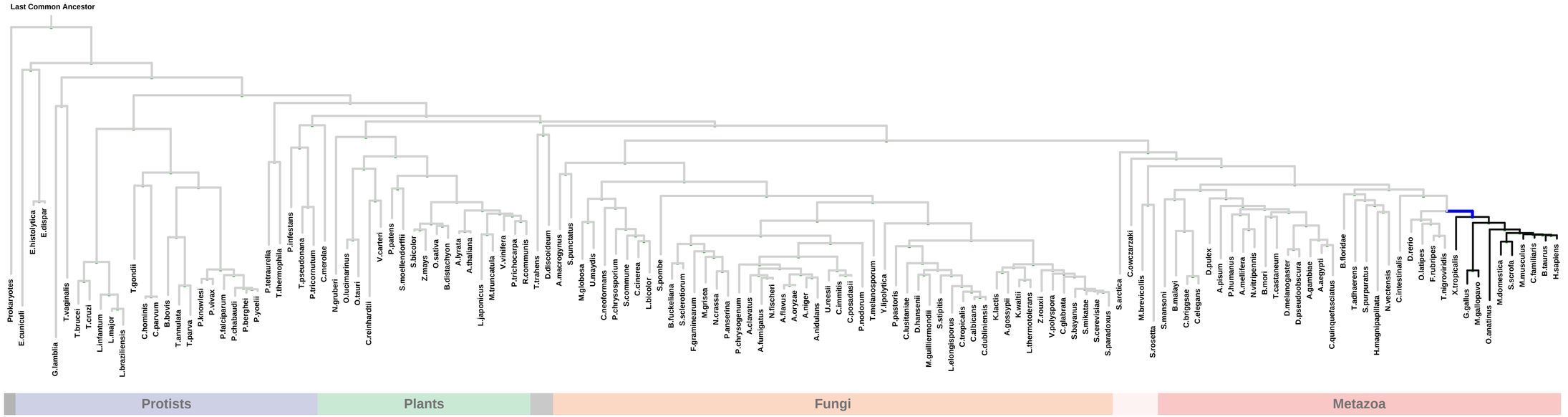
ECM 21, Gene set "basal plasma membrane", Page 1

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

1: apicolateral plasma membrane || 2: basal plasma membrane || 3: lateral plasma membrane || 4: tight junction

ECM 22, Gene set "basal plasma membrane", Page 1

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

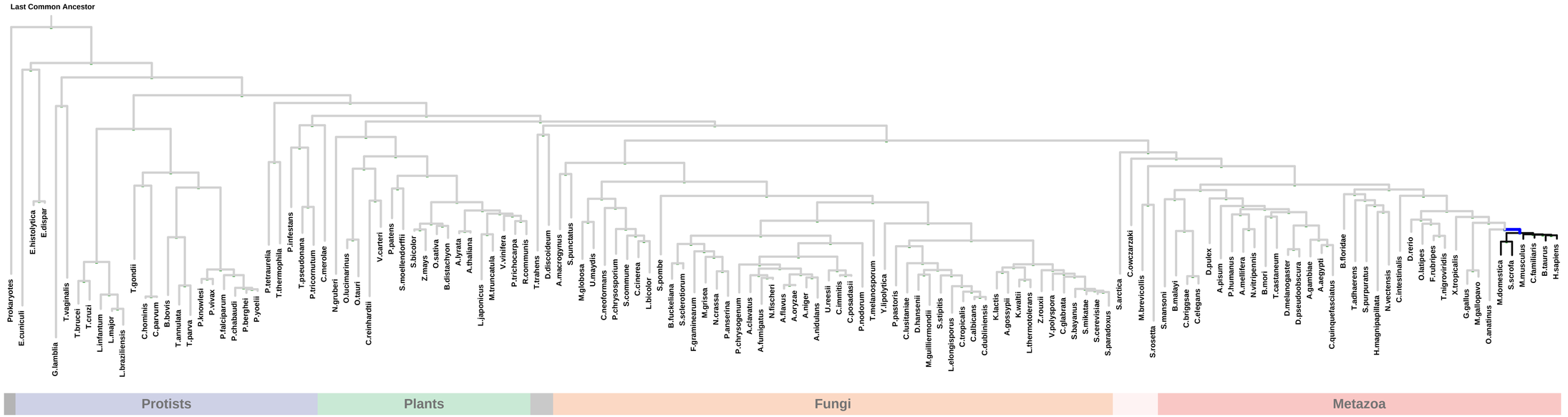


PG	Protein	LLR	Notes
	CD34		1 / 2 / 3 / 4

1: basal plasma membrane || 2: external side of plasma membrane || 3: intercellular bridge || 4: lysosome

ECM 23, Gene set "basal plasma membrane", Page 1

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



PG	Protein	LLR	Notes
	MUC20		1 / 2 / 3

1: basal plasma membrane || 2: Golgi lumen || 3: microvillus membrane