

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:

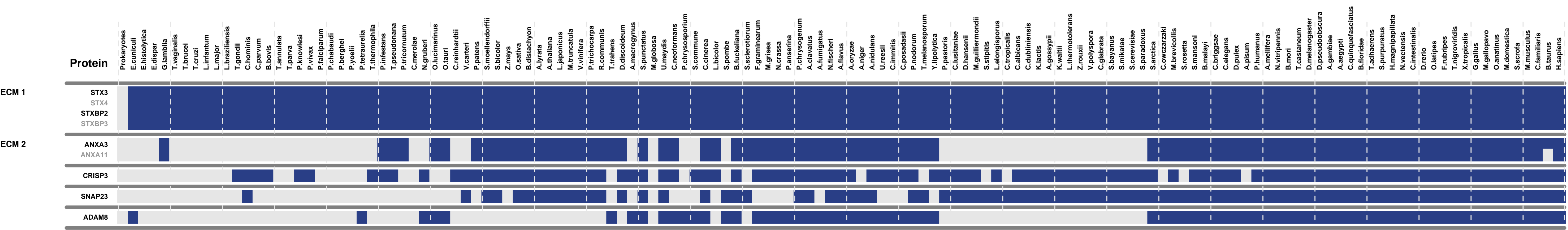
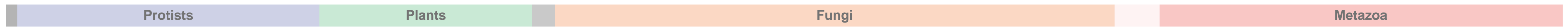
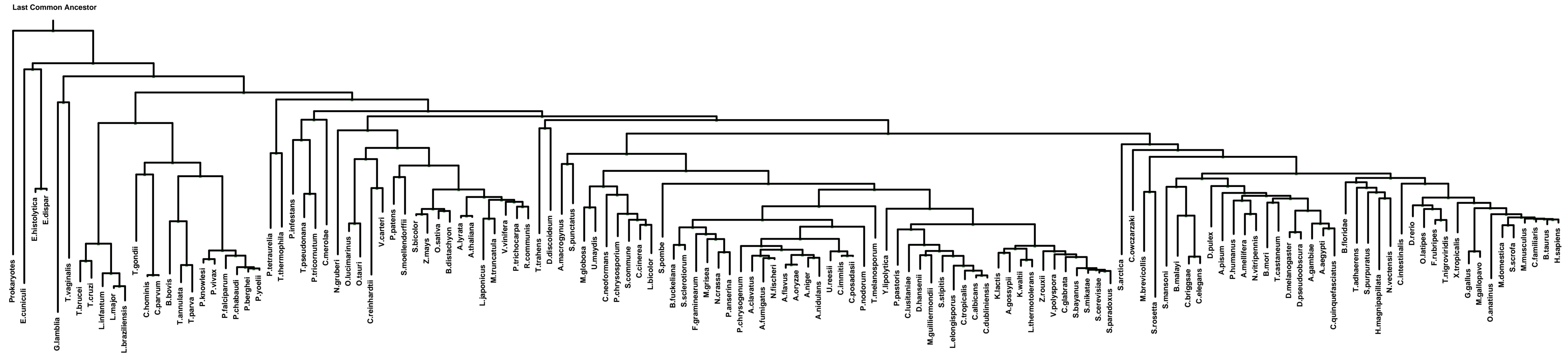
1) Overview of Evolutionarily Conserved Modules (ECMs)

- 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+

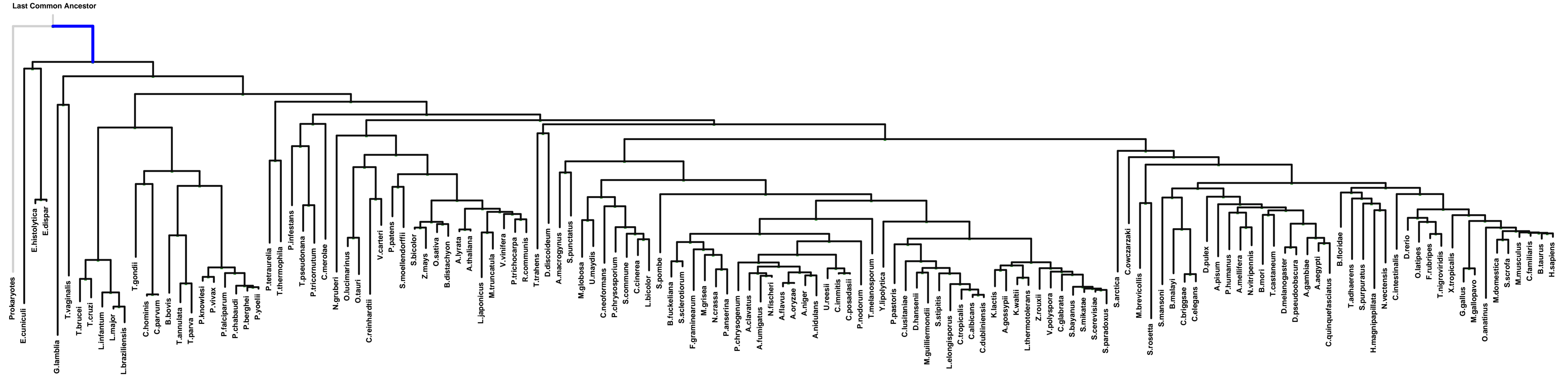
- Top panel shows the inferred evolutionary history on the predefined species tree. Branch color shows the gain event (blue) and loss events (red color, with brighter color indicating higher confidence in loss). Branches before the gain or after a loss are shown in gray.
- Bottom panel shows the input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



ECM 1, Gene set "specific granule", Page 1

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



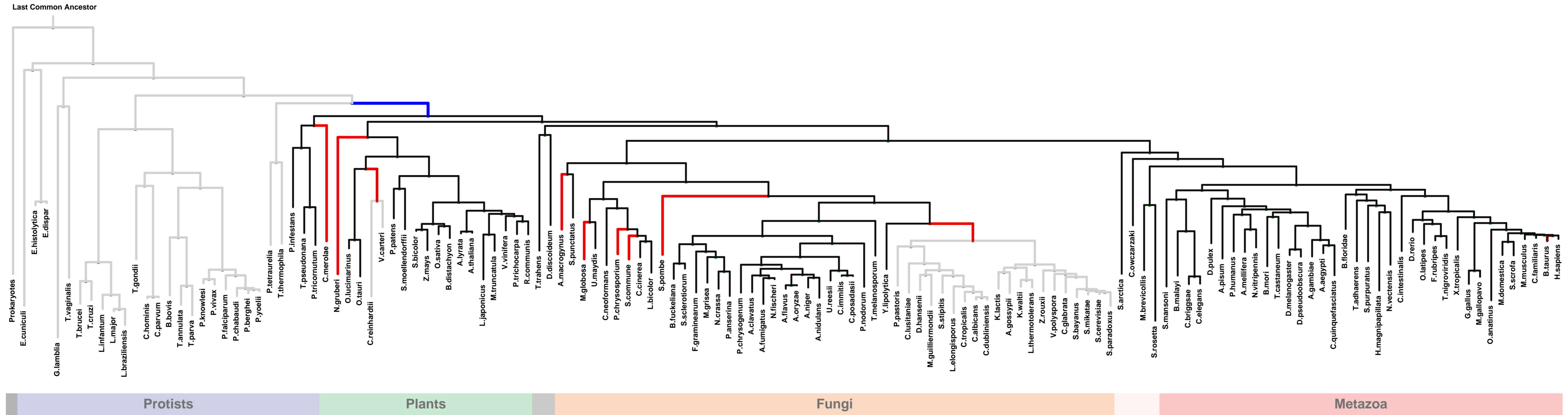
PG	Protein	Species	LLR	Notes
A	STX3	Prokaryotes		
A	STX4	E.cuniculi		
B	STXBP2	E.histolytica		
B	STXBP3	E.dispar		
		G.lambli		
		T.vaginalis		
		T.brucei		
		T.cruzi		
		L.infantum		
		L.major		
		L.braziliensis		
		T.gondii		
		C.parcum		
		B.bovis		
		T.annulata		
		T.parva		
		P.knowlesi		
		P.vivax		
		P.falciparum		
		P.chabaudi		
		P.berghoi		
		P.yoelii		
		P.tetraurelia		
		T.thermophila		
		P.infestans		
		T.pseudonana		
		P.tricornutum		
		C.merolae		
		N.gruberi		
		O.lucimarinus		
		O.tauri		
		C.reinhardtii		
		V.carteri		
		P.patens		
		S.moellendorffii		
		S.bicolor		
		Z.mays		
		O.sativa		
		B.distachyon		
		A.lyrata		
		A.thaliana		
		L.japonicus		
		M.truncatula		
		V.vinifera		
		P.trichocarpa		
		R.communis		
		T.trahens		
		D.discoidium		
		A.macrogynus		
		S.punctatus		
		M.globosa		
		U.maydis		
		C.neoformans		
		P.chrysosporium		
		S.commune		
		C.cinerea		
		L.bicolor		
		S.pombe		
		B.fuckeliana		
		S.sclerotium		
		F.graminearum		
		M.grisea		
		N.crassa		
		P.anserina		
		P.chrysogenum		
		A.clavatus		
		A.fumigatus		
		N.fischeri		
		A.flavus		
		A.oryzae		
		A.niger		
		A.nidulans		
		U.reezii		
		C.immitis		
		C.posadasii		
		P.nodorum		
		T.melanosporum		
		Y.lipolytica		
		P.pastoris		
		C.lusitanae		
		D.hansenii		
		M.guilliermondii		
		S.stipitidis		
		L.elongisporus		
		C.tropicalis		
		C.albicans		
		C.dubliniensis		
		K.lactis		
		A.gossypii		
		K.waltii		
		L.thermotolerans		
		Z.rouxii		
		V.polyspora		
		C.glabrata		
		S.bayanus		
		S.mikatae		
		S.cerevisiae		
		S.paradoxus		
		S.sarcitica		
		C.cowczarzakii		
		M.brevicollis		
		S.rossetta		
		S.mansoni		
		B.malayii		
		C.briggsae		
		C.elegans		
		D.pulex		
		A.pisum		
		P.humanus		
		A.mellifera		
		N.vitripennis		
		B.nori		
		T.castaneum		
		D.melanogaster		
		D.pseudoobscura		
		A.gambiae		
		A.aegypti		
		C.quinquefasciatus		
		B.floridae		
		T.adhaerens		
		S.purpuratus		
		H.magnipapillata		
		N.vectensis		
		C.intestinalis		
		D.rerio		
		O.laipes		
		F.rubripes		
		T.nigroviridis		
		X.tropicalis		
		G.gallus		
		M.gallopavo		
		O.anatinus		
		M.domestica		
		S.scrofa		
		M.musculus		
		C.familiaris		
		B.taurus		
		H.sapiens		

1: azurophil granule || 2: cell-cell junction || 3: growth cone || 4: neuron projection || 5: SNARE complex || 6: specific granule || 7: vacuole || 8: basolateral plasma membrane || 9: lateral loop || 10: myelin sheath adaxonal region || 11: sarcolemma || 12: trans-Golgi network || 13: cytolitic granule || 14: lamellipodium || 15: tertiary granule || 16: platelet alpha granule

LLR Notes
1/2/3/4/5/6/7
5/6/7/8/9/10/11/12
1/5/6/13/14/15
6/8/15/16

ECM 2, Gene set "specific granule", Page 1

Num of ECM Genes: 2. Num of Predicted Genes: 12. ECM Strength: 7.0

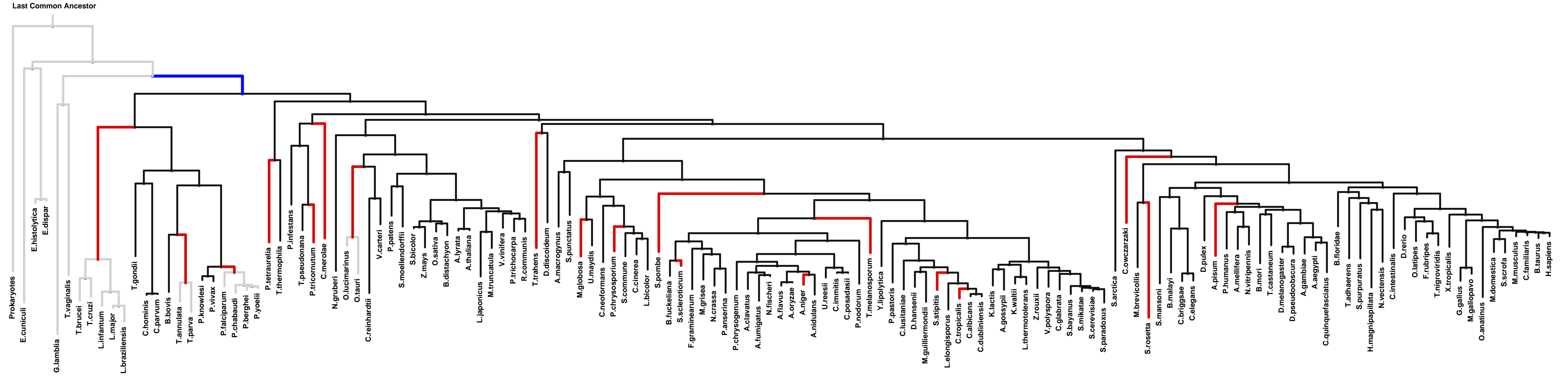
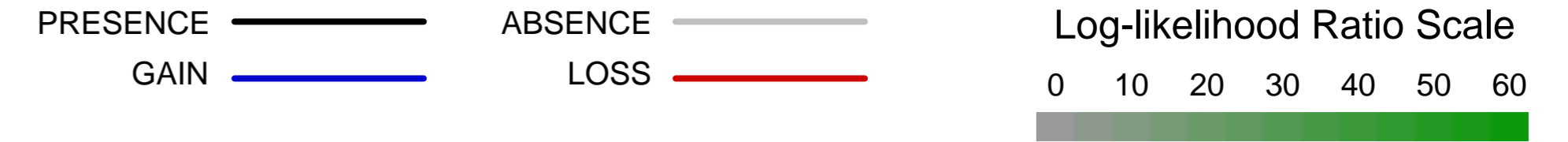


PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	ANXA3							1 / 2 / 3 / 4
A	ANXA11							4 / 5 / 6 / 7 / 8 / 9 / 10
A	ANXA10							
A	ANXA13							40.4
A	ANXA2							40.4
A	ANXA4							6 / 7 / 11 / 12 / 13 / 14 / 15
A	ANXA5							40.4
A	ANXA6							17 / 19 / 20 / 21 / 22
A	ANXA7							6
A	ANXA8							40.4
A	ANXA8L1							40.4
A	ANXA8L2							40.4
A	ANXA9							40.4
A	ANXA1							17 / 24 / 25 / 26 / 27

1: axon || 2: dendrite || 3: phagocytic vesicle membrane || 4: specific granule || 5: azurophil granule || 6: melanosome || 7: midbody || 8: nuclear envelope || 9: phagocytic vesicle || 10: spindle || 11: basement membrane || 12: early endosome || 13: extracellular matrix || 14: extrinsic to plasma membrane || 15: lipid particle || 16: myelin sheath adaxonal region || 17: sarcolemma || 18: Schmidt-Lanterman incisure || 19: cell projection || 20: endothelial microparticle || 21: external side of plasma membrane || 22: intercalated disc || 23: vesicle || 24: basolateral plasma membrane || 25: cilium || 26: cornified envelope || 27: mitochondrial membrane

ECM 3, Gene set "specific granule", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 9



Protists

Plants

Fungi

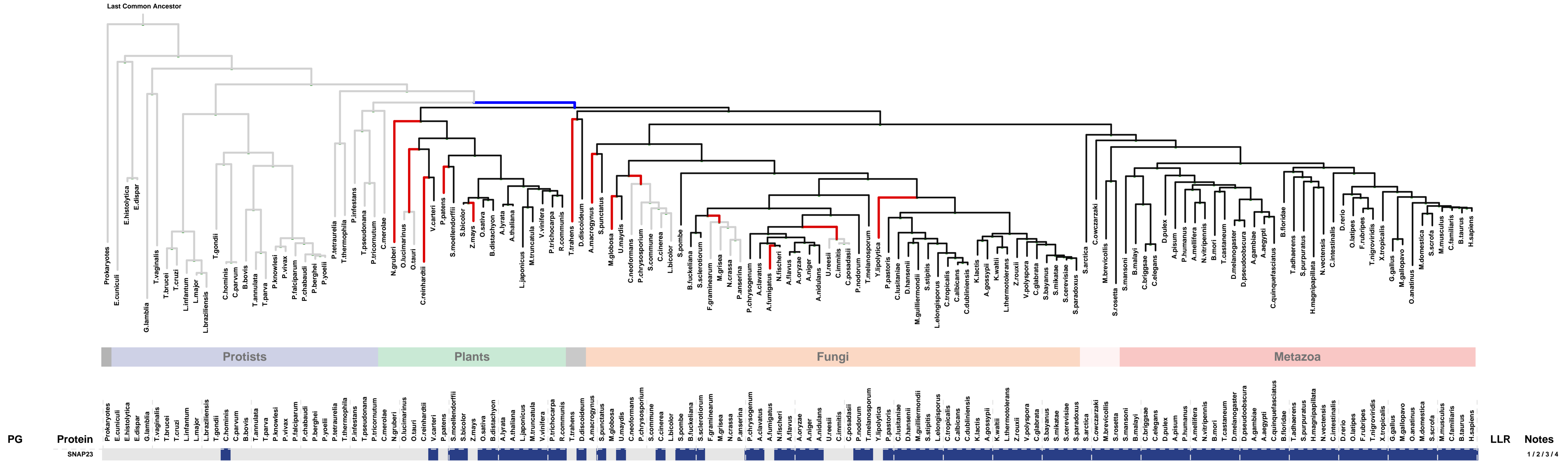
Metazoa

PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	CRISP3							
A	CRISP2							
A	R3HDML							39.2
A	GLIPR1							19.2
A	CRISP1							18.0
A	PH15							14.0
A	GLIPR1L1							13.3
A	GLIPR1L2							12.2
A	PH16							9.3
A	CRISPLD1							8.7
								6.7

1: proteinaceous extracellular matrix || 2: specific granule

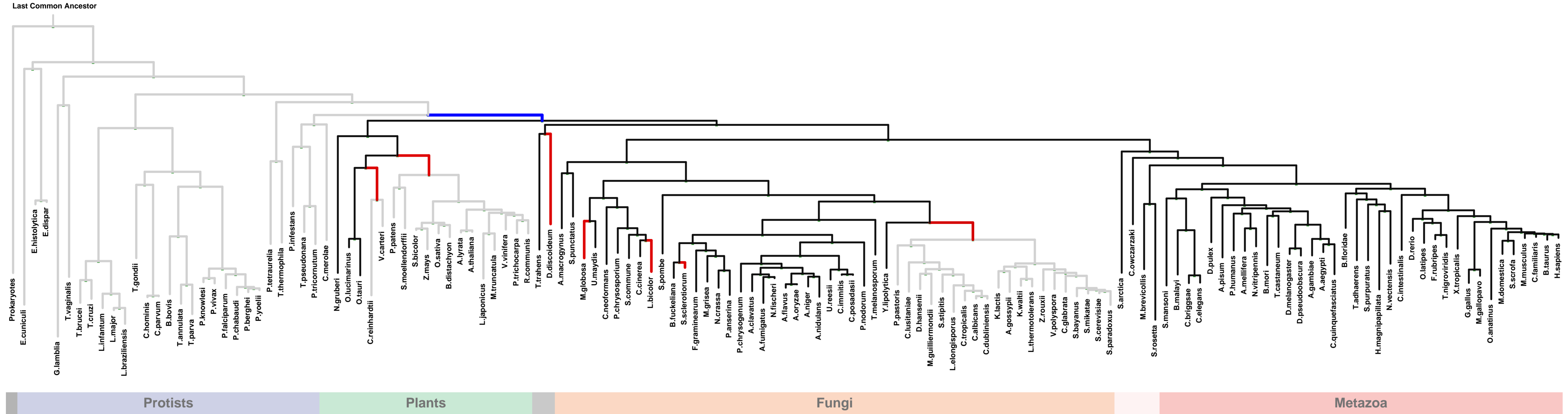
ECM 4, Gene set "specific granule", Page 1

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



ECM 5, Gene set "specific granule", Page 1

Num of ECM Genes: 1. Num of Predicted Genes: 18



PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	ADAM8	■					44.7	1/2/3/4/5
A	ADAM11						35.5	6
A	ADAM12						35.5	
A	ADAM22						35.5	
A	ADAM30						35.5	
A	ADAM33						35.5	
A	ADAM9						35.5	7
A	ADAM15						35.5	8/9/10/11
A	ADAM21						30.3	
A	ADAM20						30.3	
A	ADAM29						30.3	
A	ADAM32						29.9	
A	ADAM23						27.6	
A	ADAM19						24.7	
A	ADAM7						21.1	
A	ADAM28						11.9	
A	SYT15						6.9	
A	ADAM17						6.6	12/13/14/15/16
A	ADAM2						6.6	8

1: alpha9-beta1 integrin-vascular cell adhesion molecule-1 complex || 2: phagolysosome || 3: podosome || 4: specific granule || 5: tertiary granule || 6: extracellular matrix || 7: intrinsic to external side of plasma membrane || 8: acrosomal vesicle || 9: adherens junction || 10: endomembrane system || 11: flagellum || 12: actin cytoskeleton || 13: cell-cell junction || 14: focal adhesion || 15: membrane raft || 16: ruffle membrane