

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

Dataset:

Num of genes in input gene set: 2
Total number of genes: 20834
Prediction LLR threshold: 0

The CLIME PDF output two sections:

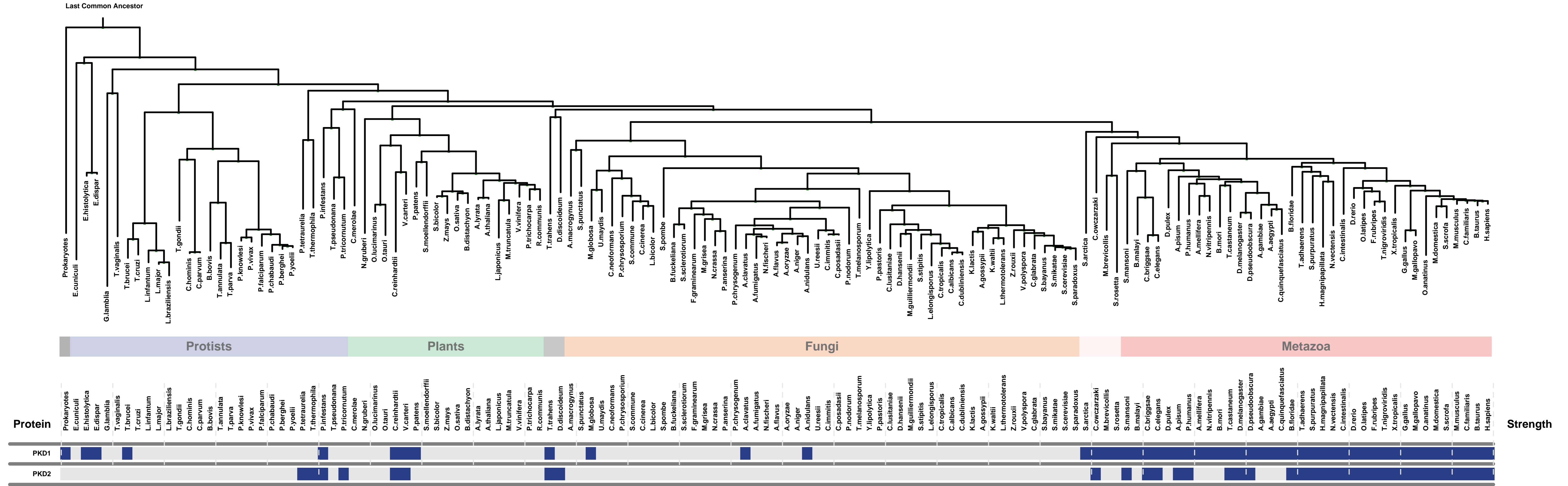
1) Overview of Evolutionarily Conserved Modules (ECMs)

- 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+

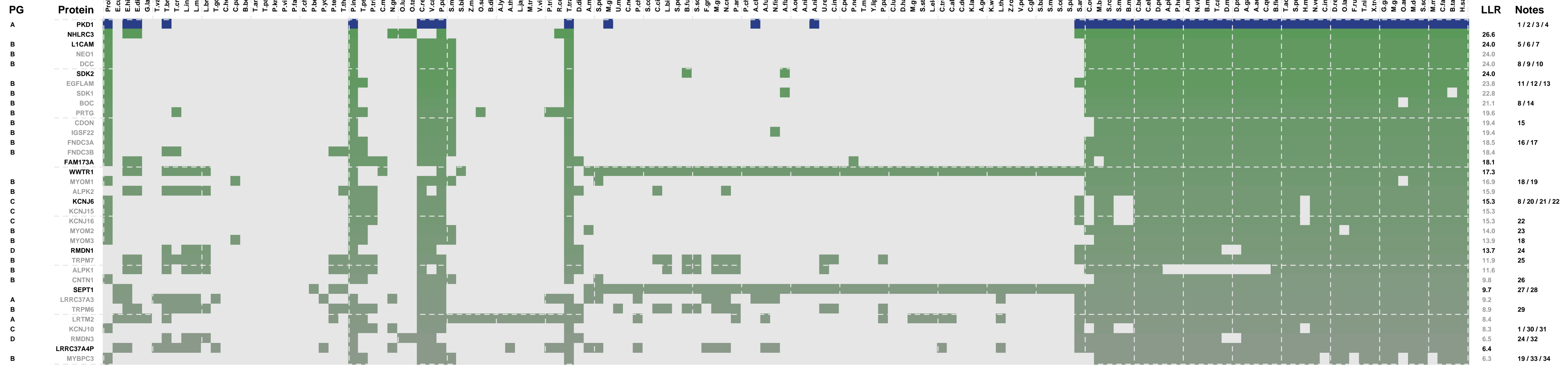
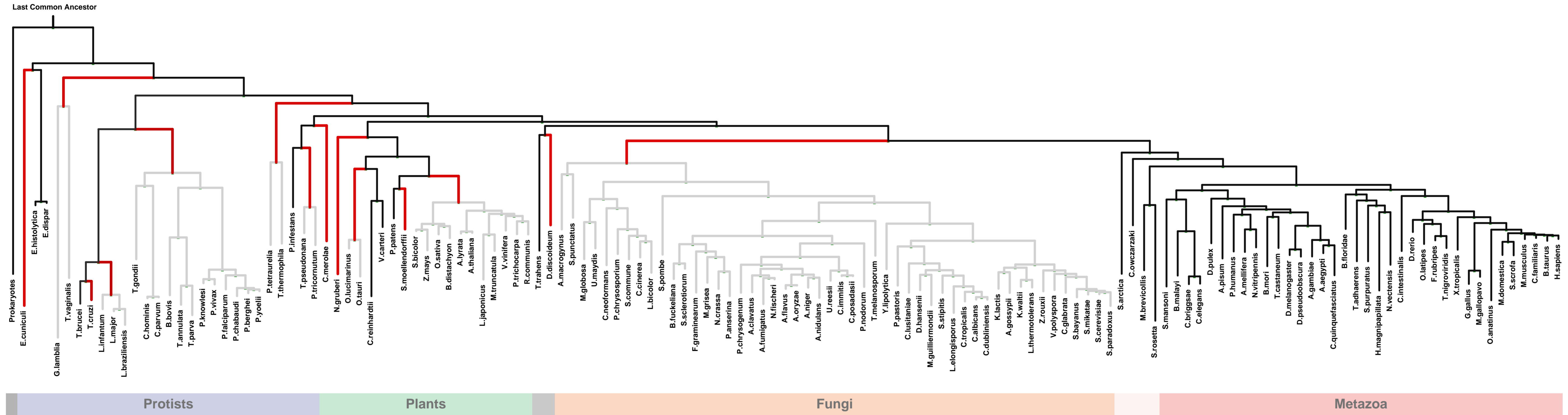
- Top panel shows the inferred evolutionary history on the predefined species tree. Branch color shows the gain event (blue) and loss events (red color, with brighter color indicating higher confidence in loss). Branches before the gain or after a loss are shown in gray.
- Bottom panel shows the input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

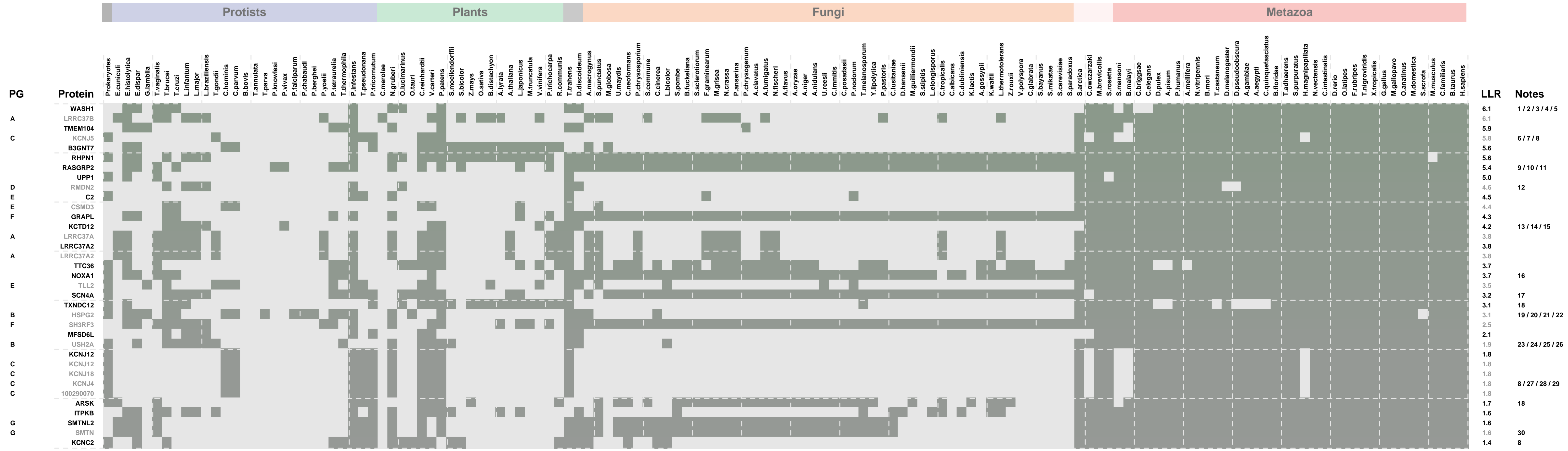
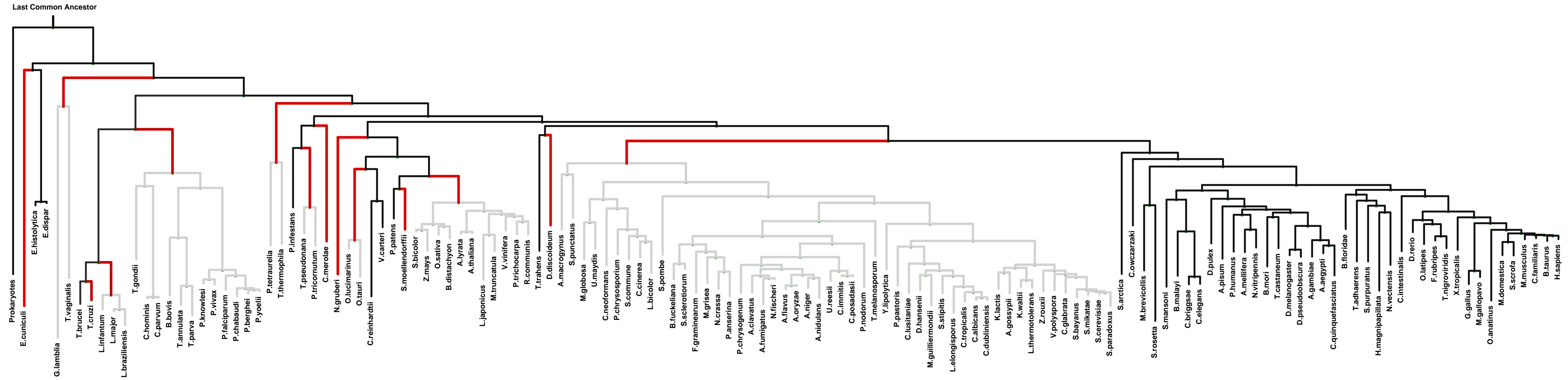
Num of ECM Genes: 1. Num of Predicted Genes: 88



1: basolateral plasma membrane || 2: cilium || 3: motile primary cilium || 4: polycystin complex || 5: external side of plasma membrane || 6: presynaptic membrane || 7: terminal bouton || 8: axon || 9: growth cone membrane || 10: membrane raft || 11: basement membrane || 12: interstitial matrix || 13: synapse || 14: growth cone || 15: extracellular matrix || 16: acrosomal vesicle || 17: vesicle membrane || 18: M band || 19: striated muscle myosin thick filament || 20: dendrite || 21: neuronal cell body membrane || 22: voltage-gated potassium channel complex || 23: myosin filament || 24: spindle pole || 25: ruffle || 26: anchored to membrane || 27: microtubule organizing center || 28: septin complex ||

ECM 1, Gene set "polycystin complex", Page 2

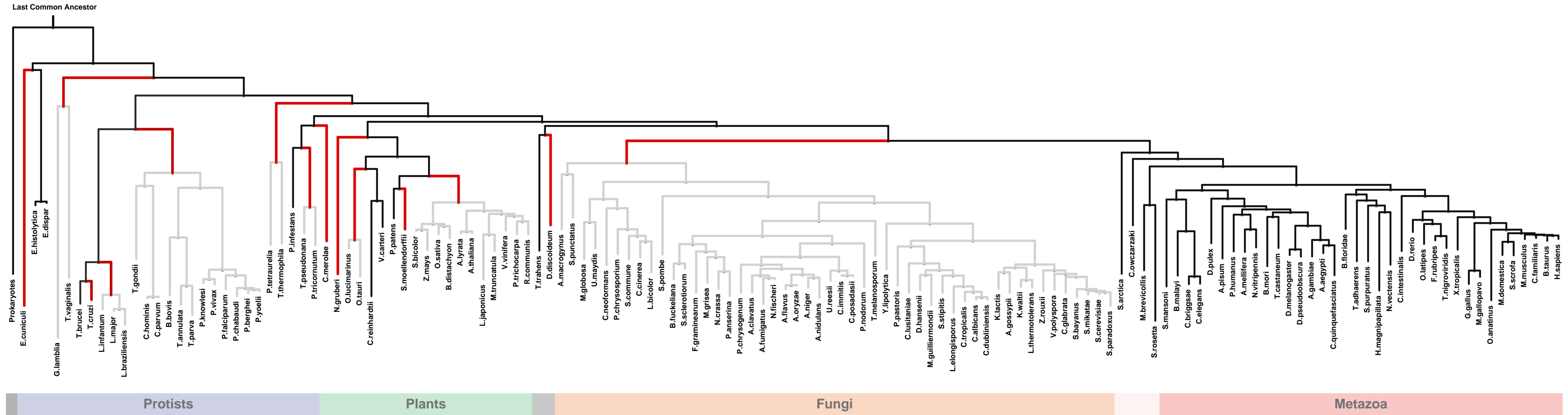
Num of ECM Genes: 1. Num of Predicted Genes: 88



1: early endosome || 2: early endosome membrane || 3: recycling endosome || 4: recycling endosome membrane || 5: WASH complex || 6: external side of plasma membrane || 7: T-tubule || 8: voltage-gated potassium channel complex || 9: neuron projection || 10: ruffle membrane || 11: synapse || 12: spindle pole || 13: postsynaptic membrane || 14: presynaptic membrane || 15: receptor complex || 16: NADPH oxidase complex || 17: voltage-gated sodium channel complex || 18: endoplasmic reticulum lumen || 19: basal lamina || 20: extracellular matrix || 21: Golgi lumen || 22: lysosomal lumen || 23: basement membrane || 24: stereocilia ankle link complex || 25: stereocilium bundle || 26: stereocilium membrane ||

ECM 1, Gene set "polycystin complex", Page 3

Num of ECM Genes: 1. Num of Predicted Genes: 88

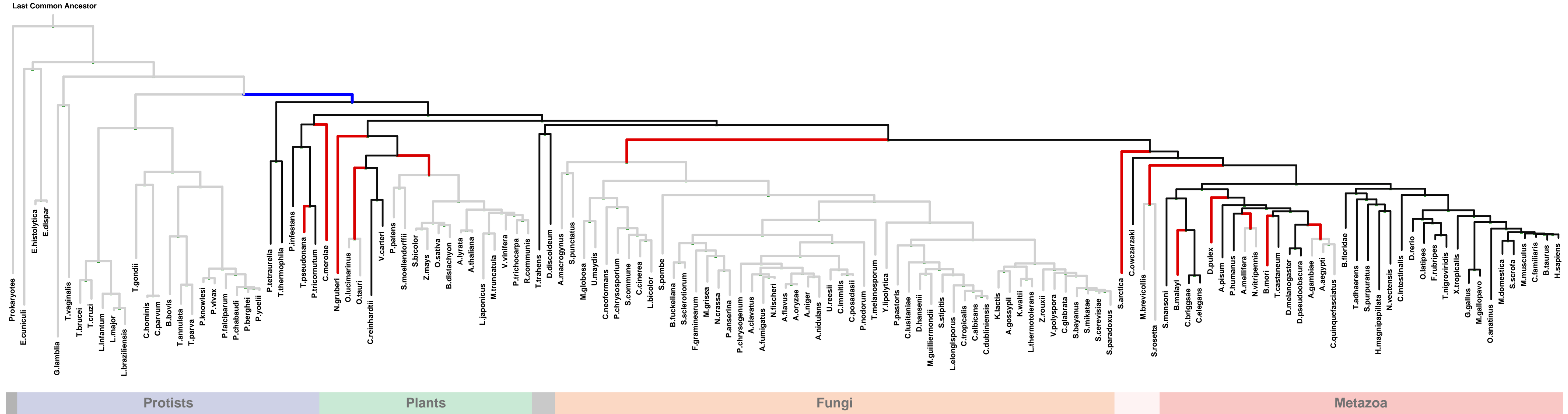


PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
H	DBNL						1.3	1 / 2 / 3 / 4
H	SEMA5B						1.1	
H	BAI3						1.1	
C	PDLIM3						0.9	5 / 6
C	KCNJ11						0.9	7 / 8 / 9
C	KCNJ9						0.8	
C	KCNJ14						0.8	
C	NCF1						0.8	10 / 11
B	HHIPL1						0.8	
B	EEF2K						0.5	
G	SPECC1						0.4	
E	PAMR1						0.3	
I	NDST2						0.3	
I	NDST3						0.3	
I	NDST4						0.3	
I	HS3ST4						0.3	
I	HS3ST6						0.3	
I	HS3ST2						0.3	
C	KCNJ1						0.2	9

1: cell cortex || 2: lamellipodium || 3: postsynaptic density || 4: ruffle || 5: actin cytoskeleton || 6: Z disc || 7: ATP-sensitive potassium channel complex || 8: T-tubule || 9: voltage-gated potassium channel complex || 10: NADPH oxidase complex || 11: phagolysosome

ECM 2, Gene set "polycystin complex", Page 1

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



PG	Protein	Prokaryotes	Protists	Plants	Fungi	Metazoa	LLR	Notes
A	PKD2							
A	PKD2L1						33.4	1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20
A	PKD2L2						19.9	
B	PKHD1						7.0	10/11/15/16
B	NECAB2						4.9	
B	KIAA1199						1.7	
B	CD36						0.7	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 luminal 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