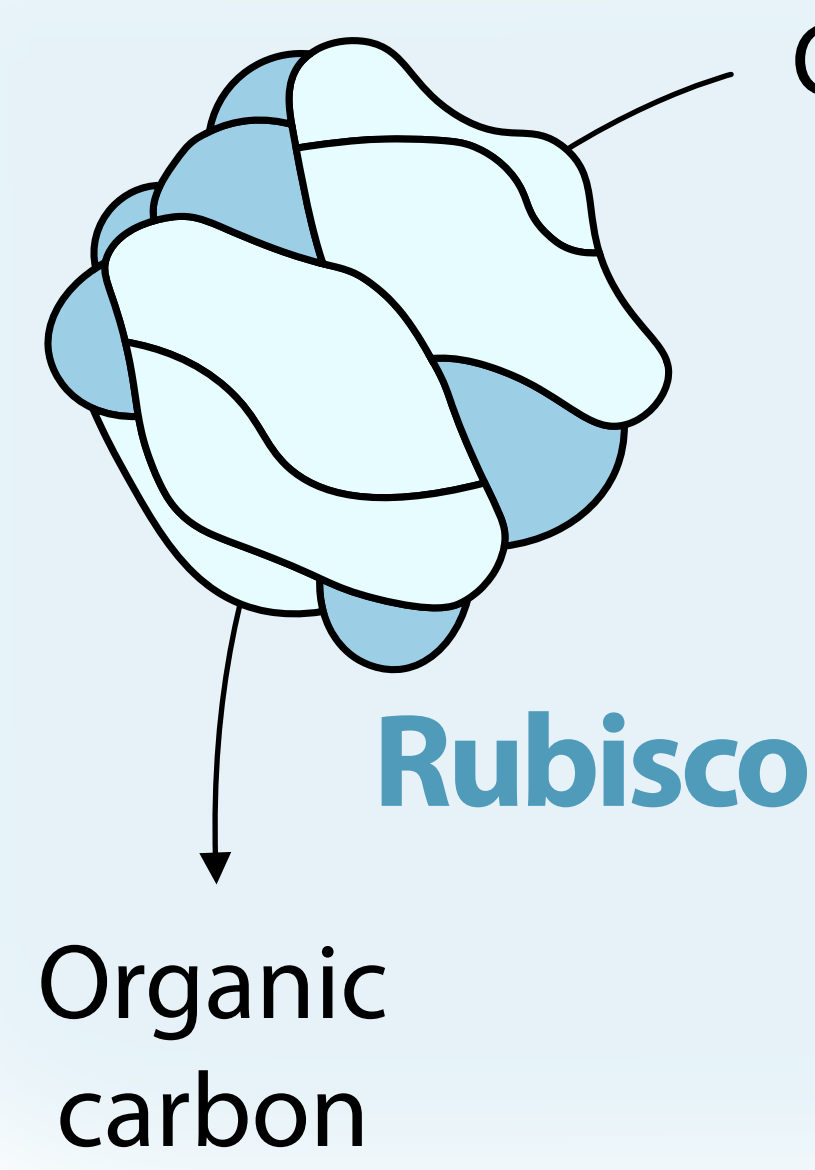


Convergent evolution in the eukaryotic CO₂-fixing organelle, the pyrenoid

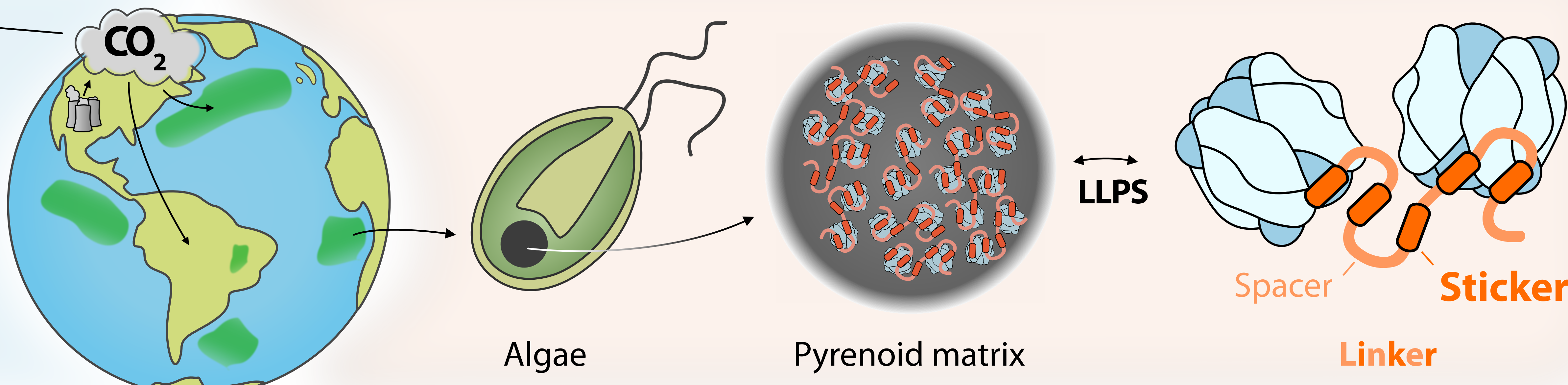
James Barrett^{1*}, Jonas Blomme², Clément Dégut¹, Sabina Musiał¹, Mihris I.S. Naduthodi¹, Philippe Van der Stappen³, Michael R. Hodgkinson¹, Manon Demulder³, Michael J. Plevin¹, James N. Blaza¹, Benjamin D. Engel³, Luke C.M. Mackinder¹



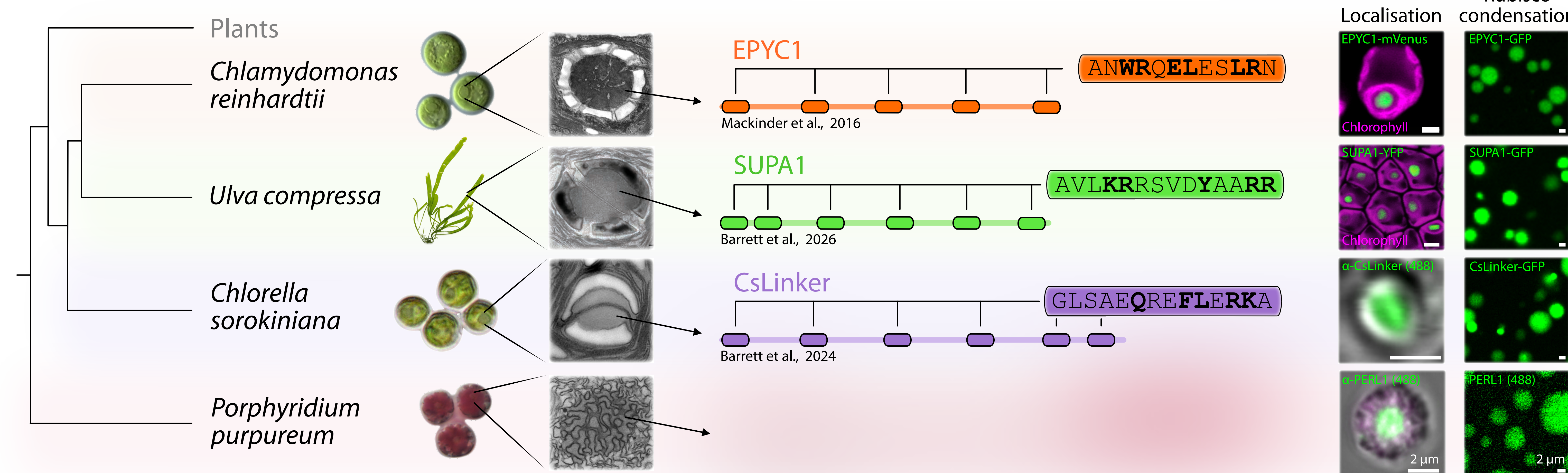
Rubisco fixes most of Earth's CO₂



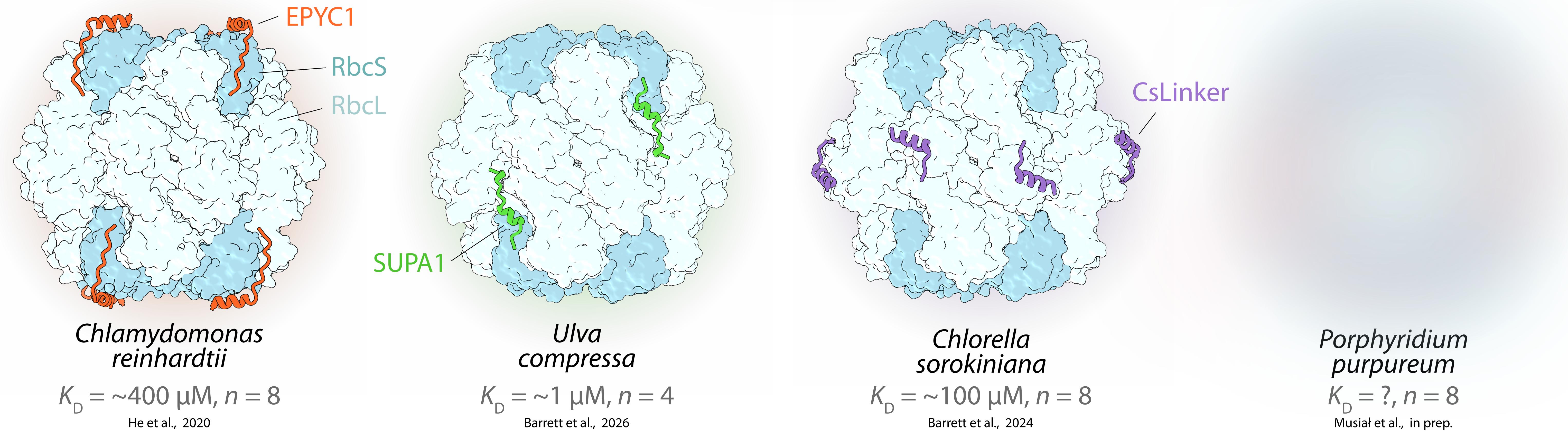
Pyrenoids are Rubisco condensates formed by phase separation in algae



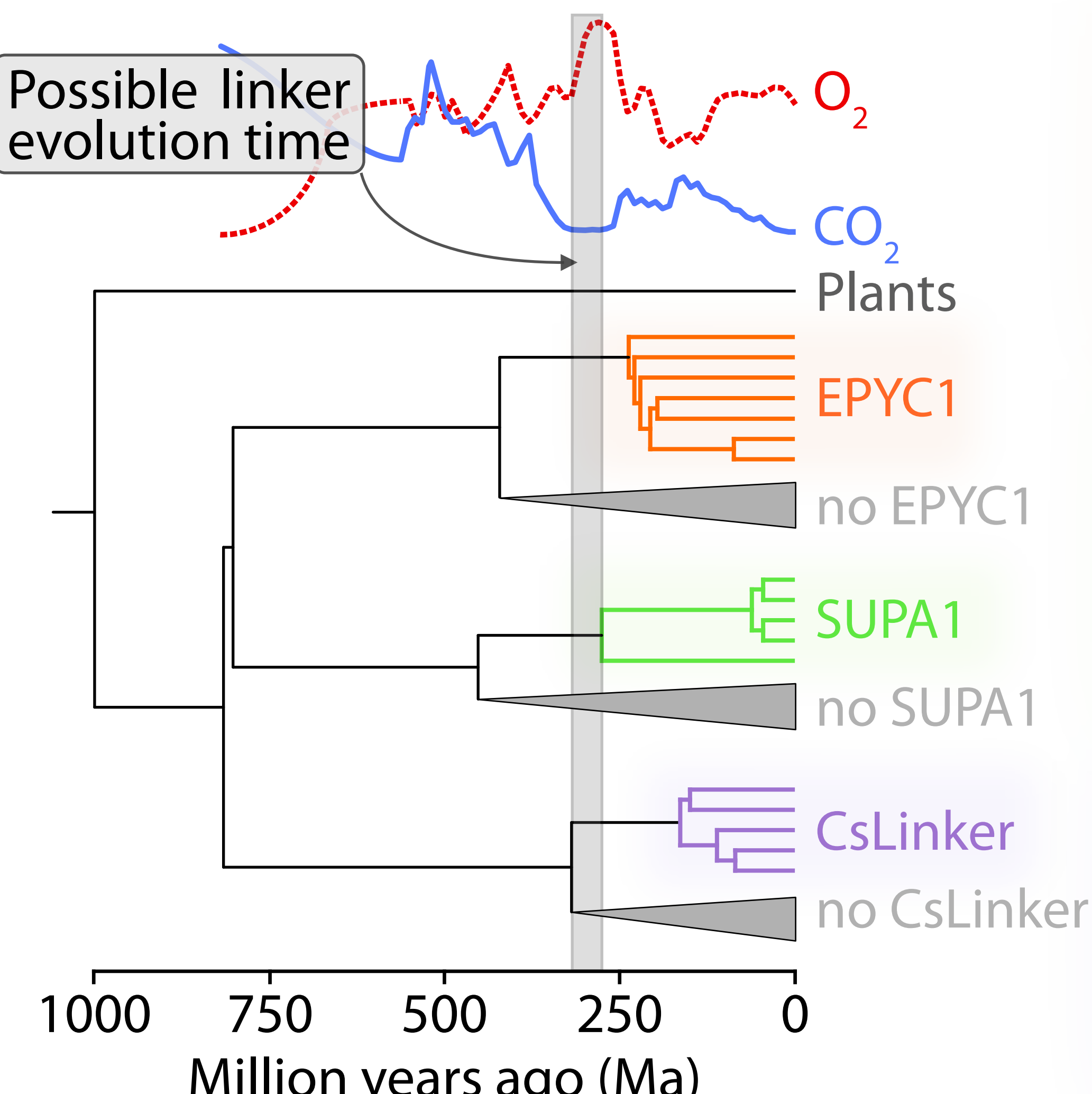
Pyrenoids across the Archaeplastida have separately evolved Rubisco-condensing linker proteins



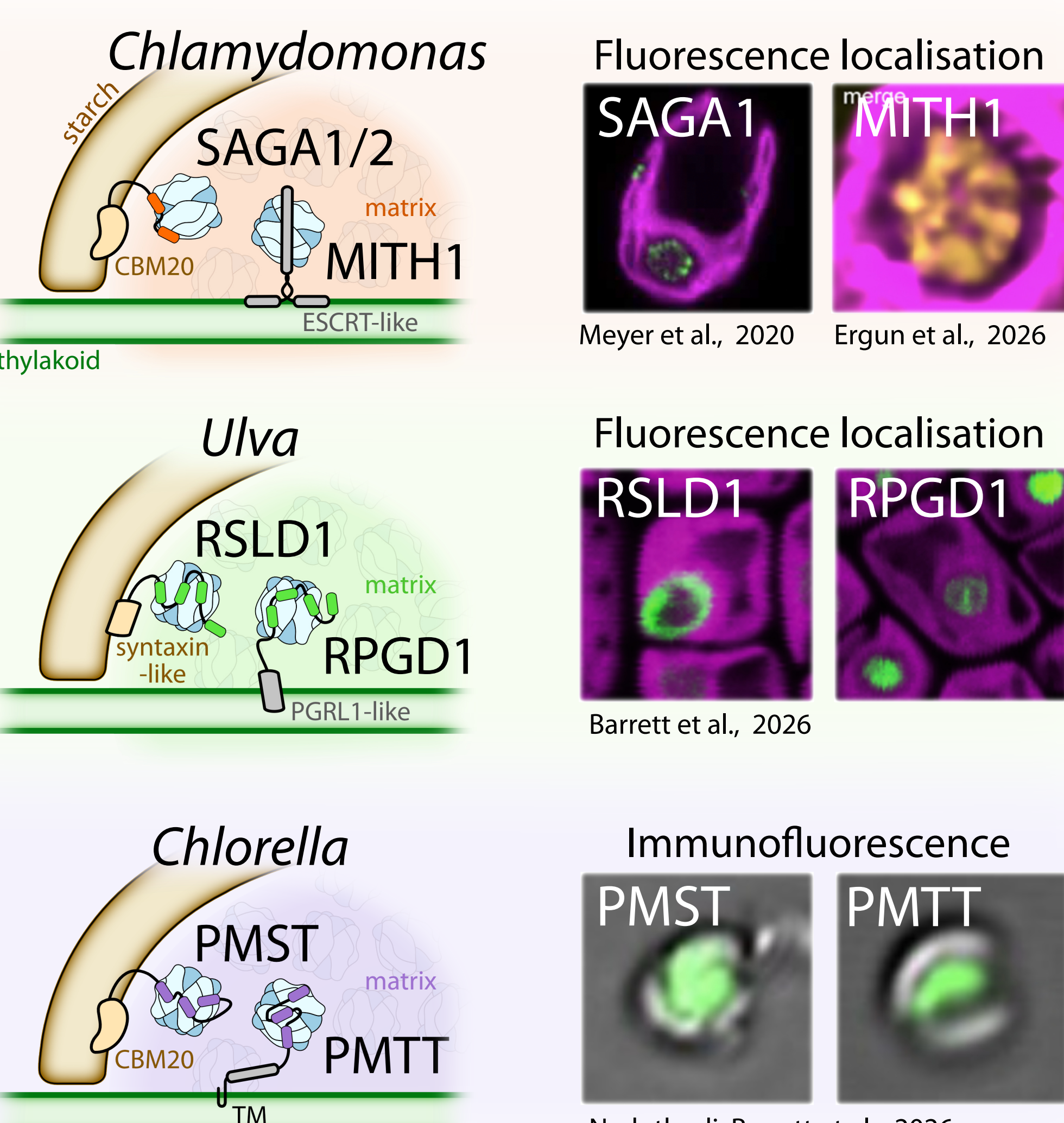
Linker proteins bind different surfaces on Rubisco



Green linker proteins may have concurrently, convergently evolved in the late Paleozoic Era



Other Rubisco-binding structural pyrenoid components have also convergently evolved



Also ask me about...

Engineering pyrenoids in C₃ plants

Conserved interface affords CsLinker cross-reactivity

OxySolve (semi-automated oxygen evolution fitting program)

FLIPper (Fast Linker Identification Pipeline for Pyrenoids)

Remote CO₂/O₂ monitoring

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