

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: RNAseq data. a Comparison of the roots and tips of projections. Transcripts from the tips either upregulated >1 Log₂FC or downregulated <1 Log₂FC in comparison to the root. FC: fold change. b Pairwise comparisons of untreated communities and communities exposed to acid or alkali. Transcripts from tips that were either upregulated >1 Log₂FC or downregulated <1 Log₂FC. FC: fold change. Analysis was done using DESeq2 bioconductor package to identify the differentially expressed genes. The package integrates Wald statistics to identify significantly regulated genes and adjustments were made for multiple comparisons with FDR/Benjamini-Hochberg. Raw read files are deposited at the European Nucleotide Archives (ENA) <http://www.ebi.ac.uk/ena> as study PRJEB41935.

File Name: Supplementary Data 2

Description: Proteins interacting with CARP3-HA, ACP3- Myc and ACP5-Myc identified by liquid chromatography – mass spectrometry (LC-MS).

File Name: Supplementary Data 3

Description: List of primers used for knockouts and genotyping.

File Name: Supplementary Movie 1

Description: Early procyclic form parasites exhibit social motility.

File Name: Supplementary Movie 2

Description: Response of early procyclic forms to hydrochloric acid (HCl). Black arrows indicate where solutions were spotted. The video is shown as a rewind loop.

File Name: Supplementary Movie 3

Description: Response of early procyclic forms to sodium hydroxide (NaOH). Black arrows indicate where solutions were spotted. The video is shown as a rewind loop.

File Name: Supplementary Movie 4

Description: Response of late procyclic forms to sodium hydroxide (NaOH). Black arrows indicate where solutions were spotted. The video is shown as a rewind loop.