Supplementary information

A PETase enzyme synthesised in the chloroplast of the microalga *Chlamydomonas reinhardtii* is active against PET and polystyrene

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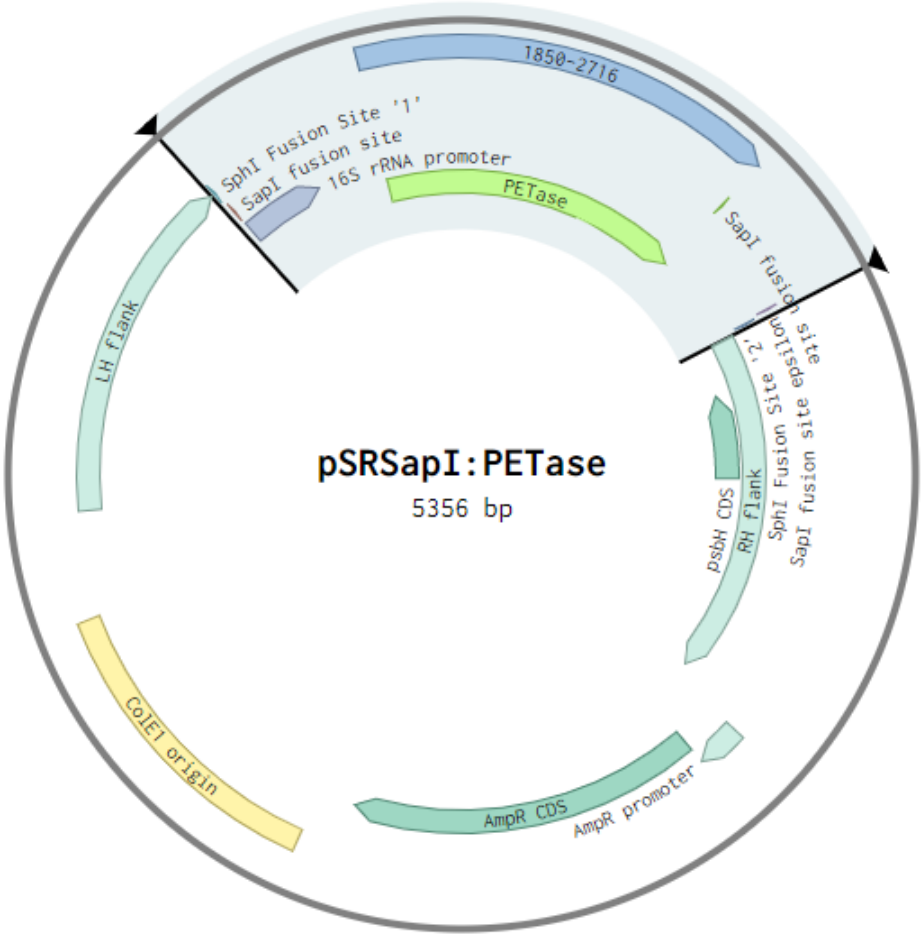

Figure S1: Transformation vector pSRSapI containing the PETase coding sequence. The entire construct is highlighted in blue and includes SapI and SphI sites added for cloning, the 16S rRNA promoter. The left and right flanks for homologous recombination and integration into the *C. reinhardtii* plastome are in green with the right flank containing *psbH* for phototrophic selection (see Figure 1A).

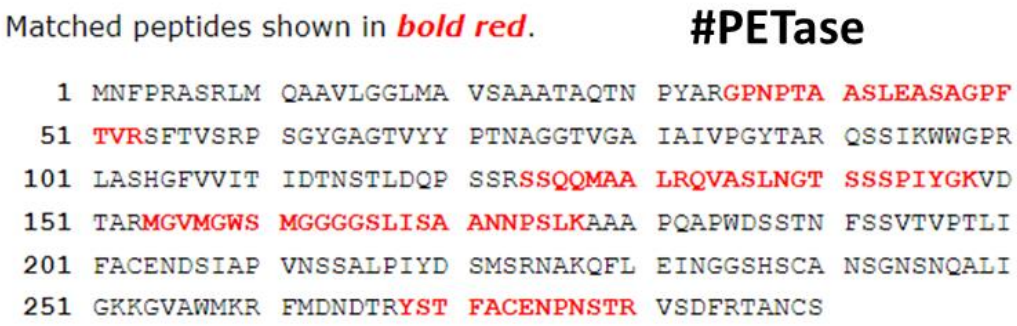

Figure S2: Sequence coverage (27%) of complete PETase sequence. The 27 residue N-terminal peptide cleaved during targeting to the thylakoid lumen is not found within the detected peptides, as predicted.

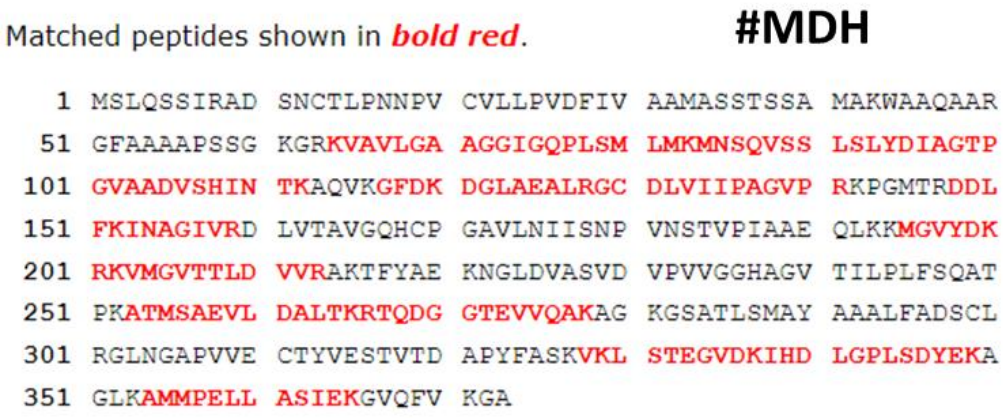

Figure S3: Sequence coverage (44%) for mitochondrial malate dehydrogenase precursor from *Chlamydomonas reinhardtii* (UniProtKB: locus MDHM_CHLRE, accession Q42686). Cleaved transit peptide = residues 1–56.

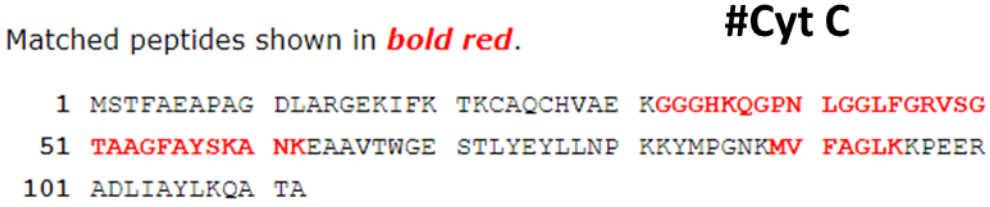

Figure S4: Sequence coverage (33%) of apocytochrome *c* precursor from *Chlamydomonas reinhardtii* sequence. (GenBank: M35173).

Table S5. Primers used to confirm integration and homoplasmy (see Figure 1A&B).

Primers	
P1 (F1.long)	5’-GTCATTGCGAAAATACTG-3’
P2 (rbcL.Fn)	5’-CGGATGTAACTCAATCGGTAG-3’
P3(RY-psaR)	5’-AACTATTTGTCTAATTTAATAACC-3’