Nucleotide sequence of a protein coding region in *Chlamydomonas reinhardtii* mitochondrial DNAPoppo H.Boer¹ and Michael W.Gray*

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We present a consolidated sequence for part of the linear 15.8 kbp mtDNA of *Chlamydomonas reinhardtii*, strain CW-15-2 (#277, Duke University Culture Collection). This region (5.15 kbp) contains complete genes for subunit I of cytochrome oxidase (COI) [1] and URF (unassigned reading frame) proteins 2 and 5 [2] (ND2 and ND5, respectively, recently identified as subunits of NADH dehydrogenase [3]), as well as a portion of a fourth gene (ORF x) encoding an unidentified protein [2]. The sequence comprises restriction fragments H1, ES2, and E3 (Fig. A). In Fig. B, we compare our sequence with ones recently published by others [4,5] for the same region of another CW-15 strain of *C. reinhardtii*. Although these sequences display >99% nucleotide identity, there are a number of differences, some of which alter the derived amino acid sequences of the COI and URF 5 proteins. In particular, omission of A618 in [5] results in a truncated URF 5 C-terminal sequence with an atypical codon usage pattern (see [2]). We observe no differences in the URF 2 coding region but we do see one difference downstream (position 5077). Positions 625-626 (GC) and 2272-2276 (TTGGT) were incorrectly reported as CG and CTTGG, respectively, in [2]; the nucleotide sequence in (B) now agrees with that in [5] at these positions. Our assignment of initiation codons for the ORF x, URF 5, COI, and URF 2 genes is based on detailed transcript mapping [2] and ms. in preparation; for this reason, our sequence of the URF 5 protein lacks the first 21 residues of the URF 5 amino acid sequence proposed in [5].

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FIGURE LEGEND

(A), Restriction map of *C. reinhardtii* mtDNA (B = BamHI; E = EcoRI; H = HindIII; S = SalI). Overhead bars indicate restriction fragments encompassed by the DNA sequence shown in (B). Arrows indicate the direction of transcription. ▲ = residues at which our sequence differs from that of [4] and [5]. Residues 1 to 2315 represent the complement of the nucleotide sequence reported in [2]. The derived amino acid sequences of the URF 5 and COI proteins are also shown, with differences from the same sequences proposed in [5] either boxed (URF 5) or indicated by solid triangles (▲).