

Supplemental Figure. Site-specific cleavage of the α subunit between its amino-terminal β -barrel domain and its central nucleotide-binding domain may be limited to trypanosomatid protozoa. The conceptual amino acid sequence for *L. major* F1-ATPase α subunit was used in a blastp (Genbank) homology search, obtaining ca. 800 sequences identified as being this subunit. After removing incompletes and duplicates, these included full-length sequences for 450 different organisms and all of these were simultaneously aligned in order of relatedness to *L. major* (<http://prodes.toulouse.inra.fr/multalin/multalin.html>). The first 68 of these are illustrated for the sequences surrounding the cleavage site. Only the trypanosomatids have the cleavage site and surrounding sequences (downward arrow with horizontal bar between alignment positions 180 and 190); this appears to be due to, in part, an insertion of site-specific amino acids that are not present in all other organisms, thereby creating an obvious gap in the alignment to the others. The single exception, *Mesostigma*, a very early green alga, has extra amino acids at the position of the cleavage site but these have no relationship to the sequence in the trypanosomatids.