MAM33 encodes an acidic protein of unknown function that is localized to the mitochondrial matrix. Mam33pis highly conserved, with putative homologs in mammals, C. elegans, A. nidulans, and Trypanosoma brucei. When expressed in S. cerevisiae, the human homolog C1QBP complements the observed slow respiratory growth phenotype of the mam33 null mutant. Human C1QBP binds to many different proteins, but its cellular role is unclear. The T. brucei putative Mam33p homolog, p22, binds to and regulates the RNA-binding activity of a protein that binds to guide RNAs during the mitochondrial RNA editing process. The N-terminal 47 residues of Mam33p are removed upon import into mitochondria, and it is found in the mitochondrial matrix as a multimer, probably a homotrimer or homotetramer. Mam33p binds to a segment of Cyb2pthat is responsible for sorting Cyb2p to the mitochondrial intermembrane space, but the significance of this is unclear since the mam33 null mutation does not affect mitochondrial import or sorting. There are conflicting reports on the phenotype of the mam33 null mutant: one report describes a reduced respiratory growth phenotype on a glycerol carbon source, while another report describes wild-type growth on glycerol but a growth defect on minimal medium with lactate as sole carbon source.