ALO1 encodes D-arabinono-1,4-lactone oxidase, a mitochondrial proteinthat converts D-arabinono-1,4-lactone to dehydro-D-arabinono-1,4-lactone, the enantiomer of ascorbate. Saccharomyces cerevisiae does not normally synthesize ascorbate, but Alo1p is sufficiently promiscuous that it can convert a number of related substrates to either dehydro-D-arabinono-1,4-lactone or ascorbate, depending on the chirality of the substrate. Like ascorbate, dehydro-D-arabinono-1,4-lactone is an antioxidant. Deletion of ALO1 results in increased sensitivity to oxidative stressand an increased rate of gross chromosomal rearrangements, implying that Alo1p suppresses oxidative damage of DNA. Transcription of ALO1 is not regulated in response to oxidative stress. Alo1p exists as a monomer embedded in the mitochondrial membraneand binds FAD.Please note: There is a history of disagreement regarding the name of the product synthesized by Alo1p. It has been called D-erythroascorbic acidin the literature. The ChEBI chemical database at the European Bioinformatics Institutechanged the name to dehydro-D-arabinono-1,4-lactone in 2008, based on the advice of the International Union of Biochemistry and Molecular Biology. The IUBMB changed the name from D-erythroascorbate to dehydro-D-arabinono-1,4-lactone in May 2008, because they decided that the name D-erythroascorbate refers to a 6-carbon compound and not a 5-carbon compound as the product is described in the literature.