ATP3 encodes the gamma subunit of mitochondrial F1-ATP synthase complex. The F0-F1ATP synthase complex utilizes proton motive force for ATP hydrolysis/synthesis. The structure of this enzyme complex is highly conserved among diverse organisms and consists of two major components, soluble F1 and membrane-bound F0, each of which contains many subunits. F1 and F0 are connected, both functionally and physically, via two additional multi-subunit structures, the central stalk and the stator stalk. The gamma subunit is a component of the central stalk. The central stalk functions like a rotor shaft to transmit the movement of the F0 proton pump to the catalytic core of F1. Although the gamma subunit is not specifically required for F1 ATPase activity, it is essential for enzyme complex cooperativity. ATP3 is essential for ATP synthase function, but it is not essential for life in yeast. Deletion of ATP3, like deletions in many genes necessary for the function or maintenance of mitochondria, leads to a \"petite\" phenotype that is slow-growing and unable to survive on nonfermentable carbon sources. General ATP synthase structure and function are reviewed in references 2 and 3. For a review that is specific to yeast, see reference 4.