ARG7 encodes the mitochondrial matrix enzyme glutamate N-acetyltransferase, which catalyzes the fifth step in the biosynthesis of ornithine, an intermediate in arginine biosynthesis. Deletion of ARG7 causes a leaky Arg- phenotype, suggesting that yeast cells can generate ornithine from acetylornithine by an alternative route. ARG7p also has amino-acid N-acetyltransferase activity, and shows sequence similarity to glutamate N-acetyltransferases from several bacterial species. ARG7 was identified in a large-scale screen for mutants affecting cell surface assembly.