

The mitochondrial citrate transport protein (CTP) functions as a malate–citrate shuttle catalyzing the exchange of citrate plus a proton for malate between mitochondria and cytosol across the inner mitochondrial membrane in higher eukaryotic organisms. In this study, for functional analysis, we cloned the gene encoding putative CTP (*ctpA*) of citric acid-producing *Aspergillus niger* WU-2223L. The gene *ctpA* encodes a polypeptide consisting 296 amino acids conserved active residues required for citrate transport function. Only in early-log phase, the *ctpA* disruptant DCTPA-1 showed growth delay, and the amount of citric acid produced by strain DCTPA-1 was smaller than that by parental strain WU-2223L. These results indicate that the CTPA affects growth and thereby citric acid metabolism of *A. niger* changes, especially in early-log phase, but not citric acid-producing period. This is the first report showing that disruption of *ctpA* causes changes of phenotypes in relation to citric acid production in *A. niger*.

Disruption of the gene encoding the citrate transport protein (CTPA, i.e., malate–citrate shuttle protein) affects the phenotype of *Aspergillus niger*.

