SSZ1 encodes a protein with sequence similarity to the HSP70 family of molecular chaperones. HSP70 is a large family of proteins that has been evolutionarily conserved from bacteriato humans. HSP70 proteins were originally classified based upon their induction by heat shock and their size of ~70kDa. S. cerevisiae has at least 9 cytosolic forms of HSP70, 2 HSP70s which are found in the endoplasmic reticulum, and 3 mitochondrial HSP70 proteins.The activity of Ssz1p is localized to the ribosome where it functions as part of the ribosome-associated complex, which includes Ssz1p, the DnaJ homolog Zuo1p, and either Ssb1p or Ssb2p. RAC binds both the active ribosome and the associated nascent polypeptide chain to assist in translational fidelity and in proper protein folding.Like all other HSP70 proteins, Ssz1p contains an N-terminal ATPase domain and a C-terminal peptide-binding domain. However, unlike typical HSP70 proteins, neither the ATPase nor peptide-binding activities appear to be necessary for Ssz1p function. Instead, it has been suggested that the role of Ssz1p is not to bind unfolded peptides, but to facilitate the ATPase-stimulating activity of Zuo1p on Ssb1p and Ssb2p, as Ssz1p is required for this stimulation in vitro. Loss of any of the RAC proteins results in the same phenotype: sensitivities to cold, high osmolarity, and translation-impairing drugs. Unrelated to RAC activity, overexpression of Ssz1p results in pleiotropic drug resistance due to a Pdr1p-mediated upregulation of transcription of PDR5 and YOR1.