SSB1 and SSB2 encode chaperone proteins that are members of the S. cerevisiae SSB subfamily of cytosolic HSP70 proteins. 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. SSB1 and SSB2 are 99% identical to each other and 63% identical to SSA1-4, the main cytosolic subfamily of HSP70s. The main function of HSP70s is to serve as molecular chaperones, binding newly-translated proteins to assist in proper folding and prevent aggregation/misfolding. The chaperone activity of Ssb1p and Ssb2p is localized to the ribosome as part of the ribosome-associated complex. RAC, which includes either Ssb1p or Ssb2p along with the Hsp70 protein Ssz1p and the DnaJ homolog Zuo1p, binds both the active ribosome and the associated nascent polypeptide chain.Like all other Hsp70 proteins, Ssb1p and Ssb2p contain an N-terminal ATPase domain and a C-terminal peptide-binding domain. Unlike most HSP70 genes, SSB1 and SSB2 expression is repressed, as opposed to induced, upon heat shock. Instead, SSB transcription is coregulated with ribosomal protein genes. Double mutant strains null for both ssb1 and ssb2 are sensitive to cold and to translation-impairing drugs. Overproduction of Ssb1p has been shown to cure cells propagating the prion form of Sup35p, [PSI+].