The exosome complex possesses 3'-5' exonuclease and endoribonucleolytic activities that are essential for diverse ribonucleolytic processes in both the nucleus and the cytoplasm. The nuclear exosome is associated with the TRAMP complex and is involved in RNA catabolic processes including RNA surveillance, pre-mRNA turnoverand the production of mature 3' ends for snoRNAs, snRNAs and rRNAs. The cytoplasmic exosome is associated with Ski7p and the SKI complex and is involved in RNA catabolic processes that include both the routine turnover of normal mRNAas well as the degradation of aberrant mRNAs. The 10-subunit core exosome complexis the same in both locations, but the nuclear exosome contains an additional subunitand two additional accessory factors. Although the exosome was originally described as a \"complex of exonucleases,\" with multiple subunits proposed to have RNase activity, later work has shown that this mechanism is unlikely in yeast. With the exception of Ski6p, none of the yeast subunits that show homology to E. coli RNase PH retain the active site residues seen in the bacterial or archael enzymes. Further research has also demonstrated that most, if not all, detectable enzymatic activity resides in the Dis3p and Rrp6p subunits.RRP4 encodes a core subunit of the exosome amd is predicted to contain both S1 and KH RNA binding domains. Like most exosome components, Rrp4p is highly conserved among eukaryotes, including humans). RRP4 is an essential gene, but both temperature sensitive mutant cellsand cells depleted for Rrp4p accumulate aberrant forms of rRNA. The same temperature sensitive mutant also accumulates aberrant forms of snoRNA and snRNAand displays defects in 3' to 5' mRNA degradation.