The TRAMP complex is a nuclear complex that functions in RNA processing, degradation and surveillance. The TRAMPcomplex polyadenylates a variety of nuclear RNAs, thereby targeting these RNAs for processing or degradation by the exosome. Characterized substrates of the TRAMP complex include aberrant and hypomodified tRNAs; aberrant and precursor snoRNAs, snRNAs and rRNAs; and cryptic unstable transcripts. In addition, mutant analysis indicates that TRAMP and the exosome also contribute to the regulation of some mRNAs, such as those encoding histones. The TRAMP complex contains three proteins: a non-canonical polypolymeraseor Trf5p), a DExD/H family RNA helicaseand a zinc knuckle domain protein. Analysis of PAP2 and TRF5 mutants show that these genes have overlapping but not redundant functions, and the terms \"TRAMP4\" and \"TRAMP5\" are sometimes used to distinguish complexes containing Pap2p from those containing Trf5p. AIR1 and AIR2 appear to be functionally redundant, as deletion of either gene does not cause a detectable phenotype, but the air1air2 double deletion is variously described as synthetically lethalor as slow growth. Although the TRAMP complex has not yet been isolated in humans, the human genome does contain sequences homologous to all three yeast TRAMP components. TRF4-1 and TRF4-2 have been identified as Pap2p and Trf5p homologs, SKIV2L2 has been identified as the Mtr4p homologand ZCCHC7 may be the Air1/2p homolog.The TRAMP component Pap2pis a polypolymerase that was originally isolated in a screen for mutants that were rescued by overexpression of DNA topoisomerase I. Pap2p was initially characterized as a DNA polymerase and was thought to be involved in sister-chromatid cohesion, functions that were also ascribed to polypolymerase Trf5p, based on homology. However, later work established that these early conclusions were incorrect: Pap2p is not a DNA polymerase and is not required for sister chromatid cohesion. More recently, Pap2p has been reported to also have 5'-deoxyribose-5-phosphate lyase activity, and both Pap2p and Trf5p have been implicated in base excision repair.