5'-3' Exonuclease

National Cancer Institute

Source

National Cancer Institute. 5'-3' Exonuclease. NCI Thesaurus. Code C16243.

Five Prime-Three Prime Exonucleases specifically catalyze the hydrolysis of terminal phosphodiester bonds of nucleic acids. Human XRN1 and XRN2 are similar to mouse Dhm1 and yeast dhp1, involved in homologous recombination, meiosis, telomere maintenance, RNA synthesis and RNA trafficking. XRN1 localizes to cytoplasmic complexes of mRNA-degrading enzymes and prefers RNA over DNA substrates. XRN2 promotes transcription termination by 5-prime to 3-prime exonuclease activity and autocatalytic cotranscriptional cleavage that may induce dissociation of RNA polymerase II from the DNA template, but function has not yet been fully determined.