MFT1 encodes a subunit of the THO complex, a nuclear complex comprised of Hpr1p, Mft1p, Rlr1p, and Thp2p, that is involved in transcription elongation by RNA polymerase II. Null mutations of any of the four THO complex genes are viable and exhibit similar phenotypes: a defect in transcription elongation, an increase in mitotic recombination between direct repeats, and defects in mRNA export. The THO complex, along with Sub2p, Yra1p, and Tex1p, forms the transcription exportcomplex, conserved from yeast to metazoans and involved in the coupling of transcription to the export of the resulting mRNA. There has been confusion surrounding the identity of the MFT1 gene and the function of its product. MFT1 was first thought to correspond to the RPS1Bgenebut was later found to be the adjacent gene, YML062C. Mft1p was originally thought to be involved in mitochondrial import because an mft1 mutation was initially isolated in a genetic screen to identify mutations blocking the import of a deleterious Atp2p-lacZ fusion protein into mitochondria. Supporting this idea, Mft1p exhibits short regions of sequence similarity to Tom20p and Tom22p, which are mitochondrial import receptors, and also binds in vitro to peptides containing mitochondrial targeting sequences. However, the isolation of mft1 in the initial genetic screen appears to result from the fact that mutations in genes encoding subunits of the THO complex block transcription of lacZ, and the in vitro binding of Mft1p to mitochondrial targeting sequences appears not to be biologically relevant.