Scp160p is an RNA-binding protein containing 14 tandemly-repeated heterogenous nuclear ribonucleoprotein K-homologydomains, a potential nuclear-export signalnear its N-terminus, and a potential nuclear-localization signalbetween KH domains 3 and 4. The protein overall demonstrates significant sequence homology to a family of vertebrate RNA-binding proteins collectively known as vigilins. Scp160p interacts with free and membrane-bound polyribosomes that are dependent upon the presence of specific mRNAs and Bfr1p. Scp160p associates with specificmessages, among which are mRNAs derived from the BIK1, DHH1, NAM8, YOR338W, and YOL155Cgenes. Despite its presence on cytosolic polyribosomes, Scp160p is predominantly associated with the nuclear envelope and the endoplasmic reticulum. Accumulation of Scp160p-ribosome complexes at the ER requires the function of microtubules but is independent of the actin cytoskeleton. Scp160p is in close proximity to translation elongation factor 1A and the WD40-repeat containing protein Asc1p at ribosomes. The C-terminus of Scp160p is essential for ribosome binding, and this interaction depends on Asc1p. It has been suggested that Scp160p connects specific mRNAs, ribosomes, and a translation factor with an adaptor for signalling molecules. These interactions might regulate the translation activity of ribosomes programmed with specific mRNAs.Scp160p is also an essential component of the mating response pathway and is the first RNA-binding protein to be indentified as a G protein effector. Scp160p binds the Gpa1p GTPase and signaling by activated Gpa1p requires this direct coupling to Scp160p. SCP160 interacts genetically and biochemically with EAP1, whose protein product functions in translation as an eIF4E-binding protein with additional uncharacterized spindle pole body functions, confirming that Scp160p plays a role in translation. Loss of either gene results in significant changes in either the complex associations or subcellular distribution of the other protein. Disruption of SCP160 also results in decreased viability, abnormal morphology, and increased DNA content, a complex phenotype that is not reversible by transformation with a plasmid carrying the wild-type gene. Further, loss of Scp160p results in changes in both the abundance and distribution between soluble and membrane-associated fractions for some messages, and in a subtle shift from soluble polyribosomes to soluble mRNPs for others.