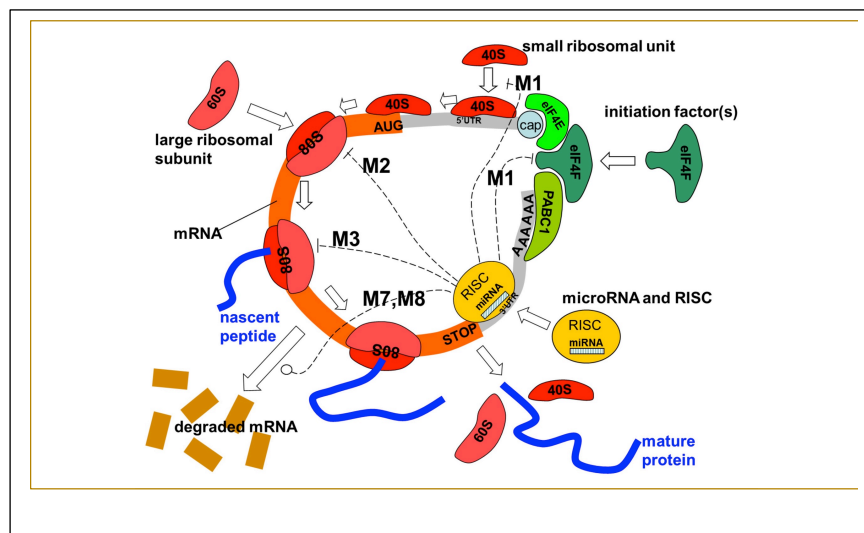


Section 7 REGULATORY RNAs

The list of how RNAs contribute to the regulation of genes grows longer each year. It seems that this group of molecules exert their influence from the level of epigenetics to protein synthesis and beyond. This group of RNAs are labelled Regulatory RNAs and their primary function is to regulate other processes within the cell. This group does NOT include telomerases (eukaryotic telomere maintenance), small nuclear RNAs or snRNAs (mRNA splicing) or tRNAs and rRNAs (protein translation). These regulatory RNAs control biological processes but are not part of the actual process.

Regulatory RNAs belong to the general class of sRNAs (small RNAs, 100-300 bp's) and may be microRNAs (miRNAs), small interfering RNAs (siRNAs) or rasiRNA (repeat-associated small interfering RNAs). As previously mentioned, the mechanisms by which RNAs influence the various processes in the cell continue to be discovered. One way is via argonaute complexes where the various RNAs are loaded onto argonaute proteins. These complexes are able to degrade mRNA, block ribosome assembly, degrade growing polypeptides and bring about changes in DNA or chromatin modification including DNA methylation and demethylation.



An illustration of the different ways an argonaute complex influence protein synthesis.