

How the ribosome enhances the fidelity of decoding mRNA

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The ribosome enhances the fidelity of translation of the genetic code. This process, called decoding, involves recognition of the codon by the anticodon on tRNA. Monitoring of codon recognition by cognate tRNA binding results in conformational changes in the ribosome that lead to GTP hydrolysis by EF-Tu in a site close to the large subunit over 50 Å away. Over the last decade, we have carried out a series of studies that allow us to deduce the structural basis of this complicated process.