

Table 1Suppl.Eukaryotic translation initiation factors and their function inprotein synthesis (adapted from Jackson *et al.* 2010).

Factors	Number of subunits	Molecular mass [kD]	Phase of translation involvement	Functions	References
eIF1	1	12.0	Selection of the correct translation start site	Fidelity of initiation codon selection. Promoting ribosomal scanning. Stimulating binding of eIF2-GTP-Met-tRNA _i to the P site of 40S subunit. Preventingpremature eIF5-induced hydrolysis of eIF2-bound GTP and Pi release.	Maduzia <i>et al.</i> 2010, Nanda <i>et al.</i> 2009, Mitchell and Lorsch 2008
eIF1A	1	16-17	Formation of 43S PIC	Transfer of Met-tRNA _i to 40S subunit. Stimulation of anti-association activity of eIF3 during early stage of initiation. Stabilizing binding of eIF5B to 40S subunit.	Mitchell and Lorsch2008,Battiste <i>et al.</i> 2000
eIF2	3	36.1, 38.4 and51.1	Selection of the initiator aa-tRNA; Formation of 43S PIC	Selection and recruitment of Met-tRNA _i to the 40S subunit.	Schmitt <i>et al.</i> 2010, Dever 2002
eIF2B	5	33.7,39.0, 50.2, 59.7 and 80.3	Formation of 43S PIC	Selection of correct translation start site. Promoting GDP-GTP exchange on eIF2.	Boesen <i>et al.</i> 2004
eIF3	13	800 (complete)	Formation of 43S PIC; Ribosome scanning of mRNA 5' UTRs	Dissociation and anti-association of ribosomal subunits. Ternary complex formation. Promoting binding of ternary complex and other components of 43S PIC to the 40S subunit. Preinitiation complex formation and mRNA recruitment to the 43S PIC complex and scanning of mRNA for AUG recognition.	Hinnebusch 2000
eIF4A	1	46.1	Attachment of 43S PIC to mRNA; Ribosome scanning of mRNA 5' UTR.	Unwinding mRNA secondary structures near the 5'-cap. Binding of 40S subunit to the CAP proximal region of mRNA. Scanning of 5' UTR.	Ganoza <i>et al.</i> 2002, Prevot <i>et al.</i> 2003,Yang <i>et al.</i> 2003
eIF4B	1	69.3	Ribosome scanning of mRNA 5' UTR.	Stimulating recruitment of mRNA to the 43S ribosomal preinitiation complex (PIC). Stimulation of helicase activity of eIF4A.	Walker <i>et al.</i> 2013, Nielson <i>et al.</i> 2011, Park <i>et al.</i> 2013, Delagoutteand Von Hippel 2003
eIF4E	1	24.5	Attachment of 43S complex to mRNA	Binding of 43S preinitiation complex to the 5'-cap of mRNA.	Gross <i>et al.</i> 2003, Dever 2002
eIF4G	1	175.5	Attachment of 43S PIC to mRNA	Assembly of cap binding complex and recruitment of 43S preinitiation complex to the 5' - cap of mRNA. Stimulating ATPase activity of eIF4A.	Prevot <i>et al.</i> 2003
eIF4H	1	25	Attachment of 43S PIC to mRNA	Stimulating helicase activity of eIF4A and eIF4F.	Calero <i>et al.</i> 2002, Janning and Pavitt 2010
eIF5A	1	16-18	Formation of 43S PIC	Induction of hydrolysis of eIF2-bound GTP on recognition of the initiation codon. Start site selection. Stabilizing binding of GDP to eIF2 or acting as GDP dissociation inhibitor.	Jennings and Pavitt 2010
eIF5B	1	138	Subunit joining and release of factors	Ribosomal subunit joining.	Maag and Lorsch 2006, Marintchev <i>et al.</i> 2003, Unbehaun <i>et al.</i> 2007

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