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# Molecular basis of the TRAP complex function in ER protein biogenesis

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## Supplementary Information Table 1

### Sequence of synthetic RNAi-resistant wildtype TRAPa gene (*syn-trap-1*)

ATGAAGCTTTCCACCGTCTTCCTCCTTGCTGCCCTCGGATTCTGCGCCGTCTACGCT  
GCTGATGTTGTCGATGGAGAGGTCACCGACGATGCTCCAAAGAACTCTCAAGAGG  
ATGACGACCTTACCATCGGAGCTTCCCAGACGCTGGACTCGCTTTCCACTTCGTC  
CAACCATCCGACGCTAACGTCGTCCTGTAATTCTACACTGGAAAGCCAGTTAAGTA  
CCTTATCGGATTCCAGgtaagtttaacatatataactaactaacctgattatttaatttcagACAAGGGAGA  
GAAGGATTTGTTGTTAAGTACGCCGAGACCTCCTTCCGCTTCCCAACCGACCACT  
CTTACCACCTTCAAACTTCACCCGTGGAGAGTACAACCGTCGTGTTGCTCCAAAG  
gtaagtttaaacagttcggtactaactaacatacatatttaatttcagGAGGAGGTTACCCTTGATTACGGATT  
CTACGCTCACGAAACCTTCGCTGGACGTCCAGTCGGACTTGTTGTTAACGTCCACT  
ACCAAGATGCTGATGGAAACGTCTTCGTTAACAACGTTTACAACCAAACCTATCAAC  
ATCATGGAGGATGATTCCGGATTCTCCGGAGAGACTGGATTCTTTTCATTTTCTTC  
GTCGCTCTTCCATCGGAGGACTTTACCTCTCTAACCAATTCCTCTCTAAGCTTTCT  
CGTAAGTCCGGACTTTCCAAGCGTCGTGTCGTCGAGCAAGGAACCTCTTCTGAGGT  
TGATTTTCGAGTGGATCCCACGCGACGCTGTTAAGgtaagtttaaacatgatttactaactaactaatctgat  
ttaatttcagACAAGGAGAAGCGCTCTCCAGCTACCGTTTCTCCAAGGCCCGTAAGT  
CCGCTAAGAAGGCCGACGATTATAAAGATGATGATGATAAAATAA

Lower case = synthetic introns. Grey = FLAG tag.

## Supplementary Information Table 2

### Sequence of synthetic RNAi-resistant wildtype TRAP $\gamma$ gene (*syn-trap-3*)

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ATGGGAAAGCTTACTAAGGAGGAGGAGCTCCTTCTTTCTTCTTACTCTGCTACCTC
TTCTACTAAGgtaagttaaacaatatataactaactaacctgattattaaatttcagGGAAATCTTTTCTTCTAC
CTTAACGCTCTTATCATCTCCATCGCTCCACTTTACCTTTTCTACGGAGTCCATCAA
ATGGAGATCCAAGATTCTCTCGTCTGCTGGGGACTTTCCGCTGTCGGAACCGCTTA
CCTTCTTTCCCTTGCTTGCAAGAACCAAAAGTGCCTCCTTAAGCACCAAATCGTTA
TGAAGCGTGGATCCGCCGTTGAGCGTGAGATCTCTGGACAATACGCCGCCGATAA
GgtaagttaaacagtcggtactaactaacatacatattaaatttcagAAGATGACCGTCAAGGAGAAGGAG
GAGCGTGCTCTTCCGTAAGgtaagttaaacaatgattttactaactaactaatctgattaaatttcagAACGAG
GTTGCTGATACCGAGTCTACCTACCTTTCTGTTTTCTACACCAACTCTCTTTACCTT
ACCATCATGCTTGTCTCCGCTTTCTTCCTTCTTGCTAACGTTGCCCCAGTCTTCAAC
CTTCTTATCTCTACCATCGGATCCGCTGGACTTGTCGCTTTCCTTTCCACCGCCAAG
AACGATTATAAAGATGATGATGATAAAATAA
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Lower case = synthetic introns. Grey = FLAG tag.

**Supplementary Information Table 3**

	<i>C. elegans</i> strains
DEU156	gamSi56 [ <i>trap-1p::WT-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU157	gamSi57 [ <i>trap-1p::W228A-K239E-K235E-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU158	gamSi58 [ <i>trap-1p::<sup>133</sup>HETFAGR/SSSSSSS<sup>139</sup>-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU159	gamSi59 [ <i>trap-1p::<sup>133</sup>HETFAGR/SSSSSSS<sup>139</sup>-W228A-K239E-K235E-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU160	gamSi60 [ <i>trap-1p::F98T-Y104T-L106T-F109T-L126T-Y128T-Y131T-V141T-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU161	gamSi61 [ <i>trap-3p::WT-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU162	gamSi62 [ <i>trap-3p::K103E-K104E-K108E-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU163	trap-1(gk5960); zcIs4 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP</i> ]
DEU164	trap-1(gk5960); zcIs4; gamSi56 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP; trap-1p::WT-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU165	trap-1(gk5960); zcIs4; gamSi57 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP; trap-1p::W228A-K239E-K235E-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU166	trap-1(gk5960); zcIs4; gamSi58 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP; trap-1p::<sup>133</sup>HETFAGR/SSSSSSS<sup>139</sup>-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU167	trap-1(gk5960); zcIs4; gamSi59 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP; trap-1p::<sup>133</sup>HETFAGR/SSSSSSS<sup>139</sup>-W228A-K239E-K235E -syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU168	trap-1(gk5960); zcIs4; gamSi60 [ <i>hsp-4p::GFP; loxP + myo-2p::GFP + rps-27p::neoR + loxP; trap-1p::F98T-Y104T-L106T-F109T-L126T-Y128T-Y131T-V141T-syn-trap-1-FLAG; icd-2p::mCherry</i> ]
DEU169	zcIs4; gamSi61 [ <i>hsp-4p::GFP; trap-3p::WT-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU170	zcIs4; gamSi62 [ <i>hsp-4p::GFP; trap-3p::K103E-K104E-K108E-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU171	zcIs4; gamSi56; gamSi61 [ <i>hsp-4p::GFP; trap-1p::WT-syn-trap-1-FLAG; trap-3p::WT-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU172	zcIs4; gamSi56; gamSi62 [ <i>hsp-4p::GFP; trap-1p::WT-syn-trap-1-FLAG; trap-3p::K103E-K104E-K108E-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU173	zcIs4; gamSi57; gamSi61 [ <i>hsp-4p::GFP; trap-1p::W228A-K239E-K235E-syn-trap-1-FLAG; trap-3p::WT-syn-trap-3-FLAG; icd-2p::mCherry</i> ]
DEU174	zcIs4; gamSi57; gamSi62 [ <i>hsp-4p::GFP; trap-1p::W228A-K239E-K235E-syn-trap-1-FLAG; trap-3p::K103E-K104E-K108E-syn-trap-3-FLAG; icd-2p::mCherry</i> ]

DEU175	daf-2(e1368); trap-1(gk5960) [daf-2(e1368) III.; <i>loxP</i> + <i>myo-2p::GFP</i> + <i>rps-27p::neoR</i> + <i>loxP</i> ]
DEU176	daf-2(e1368); trap-1(gk5960); gamSi56 [daf-2(e1368) III.; <i>loxP</i> + <i>myo-2p::GFP</i> + <i>rps-27p::neoR</i> + <i>loxP</i> ; <i>trap-1p::WT-syn-trap-1-FLAG</i> ; <i>icd-2p::mCherry</i> ]
DEU177	daf-2(e1368); trap-1(gk5960); gamSi57 [daf-2(e1368) III.; <i>loxP</i> + <i>myo-2p::GFP</i> + <i>rps-27p::neoR</i> + <i>loxP</i> ; <i>trap-1p::W228A-K239E-K235E-syn-trap-1-FLAG</i> ; <i>icd-2p::mCherry</i> ]
DEU178	daf-2(e1368); trap-1(gk5960); gamSi60 [daf-2(e1368) III.; <i>loxP</i> + <i>myo-2p::GFP</i> + <i>rps-27p::neoR</i> + <i>loxP</i> ; <i>trap-1p::F98T-Y104T-L106T-F109T-L126T-Y128T-Y131T-V141T-syn-trap-1-FLAG</i> ; <i>icd-2p::mCherry</i> ]

**Supplementary Information Table 4.** Antibodies used in this study

Antibody	Source	Catalog No.	RRID	Dilution for blotting
Rabbit anti-FLAG	Sigma-Aldrich	F7425	AB_439687	1:2000
Mouse anti-GAPDH	Proteintech	60004-1-Ig	AB_2107436	1:5000
Mouse anti-Tubulin	DSHB	AA4.3	AB_579793	1:500