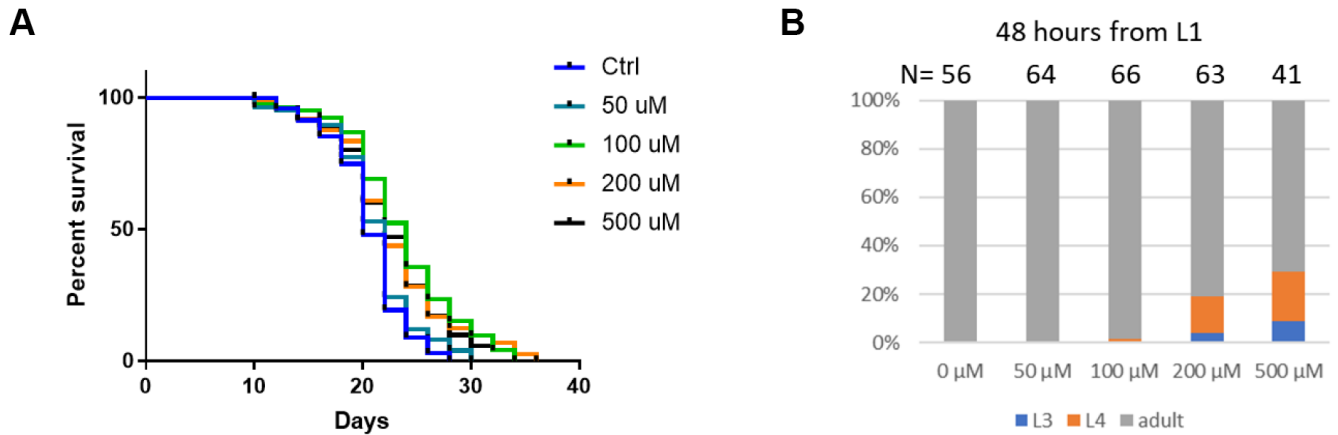
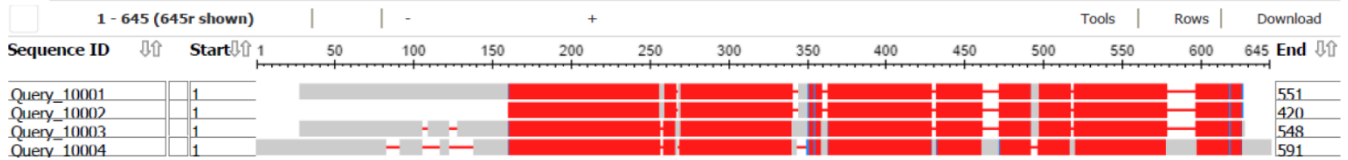


SUPPLEMENTARY FIGURES



Supplementary Figure 1. (A) L-carnitine extends lifespan at various concentrations. Wild-type *C. elegans* were synchronized at L1 larvae stage and raised on NG medium supplemented with or without 10 μ M L-carnitine. 50 μ M FUDR was added to prevent reproduction. Dead and viable worms were counted every 2 or 3 days starting from day-10 of adulthood. Data were analyzed by log-rank test (Supplementary Table 5). (B) 200 and 500 μ M L-carnitine cause developmental delay in some worms. Synchronized L1 worms in (A) were checked for development stage at L3, L4 and adult. Percentage of L3 and L4 in the whole population were shown in blue and orange, respectively.

A



B

<input checked="" type="checkbox"/>	Query_10001	1	-----MRDYDEVIAlFLGEWGPfQRLIFfLLSASIIpNGfNGMSVVFfLAG-TPEHRCR	51
<input checked="" type="checkbox"/>	Query_10002	1	-----	
<input checked="" type="checkbox"/>	Query_10003	1	-----M-GYDDVITHLGEfGPYQKRiYYLLCLPAIVCAFHKLAgVfLLA-KPDFRCA	50
<input checked="" type="checkbox"/>	Query_10004	1	msefeeevlkqirptyakkrkkekkdvfvYTFNFEeVLQKIGAGfGPYQIFCFIVILYASIEWAGNStFMHLLGSfEPDWNCT	80
<input checked="" type="checkbox"/>	Query_10001	52	VPDAANLSSAWRNNSVPLRLRDGRvphsCSRYRLATIANfSaIglpGRDvDLGQLEQESCLDGWEfSQDvVYLSTVvTE	131
<input checked="" type="checkbox"/>	Query_10002	1	-----	
<input checked="" type="checkbox"/>	Query_10003	51	LPYENGSIYELSPHLWNLSYPENER----CSYYDvDYTEEYL-----NGSIPRSSNETKTC-SSYVYDRSKYLNSAVTE	119
<input checked="" type="checkbox"/>	Query_10004	81	LA-----NNQTVIITAPThDD-----TCNFI-----KQNCTNLAPVKQNLfEFFSIVGQ	123
<input checked="" type="checkbox"/>	Query_10001	132	WNLVCEdNWkVPLTTSLFFVGVLLGSfVSGQLSDRfGRKNVLFATMAVQTGFsFLQIFsISWEMfTVLfvIVGMGQISNY	211
<input checked="" type="checkbox"/>	Query_10002	1	WNLVCEdDWkVPLTTSLFFVGVLLGSfISGQLSDRfGRKSiLFLTMAVQTGFsFLQIFsTSWEMfTVLfvIVGMGQISNY	80
<input checked="" type="checkbox"/>	Query_10003	120	WNLVCSrSLLSATSDSLfMLGVLLGSLfFGQMSDKLGRKPTFFASLVLQLfFGVLAAVAPEYfSYTISRMIvGATTSGVF	199
<input checked="" type="checkbox"/>	Query_10004	124	FQLICDDSDkVEYIEVIMAGSSLIgSiIGHMGDHfGRQTIFfTGELLIIITSMCTAAQSWIAfSVIQGVNCFYGVIE	203
<input checked="" type="checkbox"/>	Query_10001	212	VVAFILGTEILGKSVRIIFSTLGVCT--FFAVGYMLLPLfAYfIRDWRMLLLALTVPGVLCVPLWwFIPESPRWLI SQRR	289
<input checked="" type="checkbox"/>	Query_10002	81	VVAFILGTEILGKSVRIIFSTLGVCV--FFAIGYMLLPLfAYfIRDWRMLLLALTLpGLLCVPLWwIIPESPRWLI SQGR	158
<input checked="" type="checkbox"/>	Query_10003	200	LVAYVIALEMVGSsYR---LFAGVAMQmFFSVGFMLTAGfAYfIHDWRWLQIAITLpGLLFCYyWIIIPESARWLLMKGR	276
<input checked="" type="checkbox"/>	Query_10004	204	TTSLTMMVEfTSNkFR---VIMVNAfQ--WPIAYMTIALIAWLtQGWQYVfVfLNLVSSPLAIGfMLfLESPrWLIARND	278
<input checked="" type="checkbox"/>	Query_10001	290	FREAEDIIQKAAMNNIAVP----AVIFDSVEELNPLK----QQKAFILDLFRTRNIAIMTImSLLLWMLTSVGYfALS	360
<input checked="" type="checkbox"/>	Query_10002	159	YKEAEVIIRKAAKINNTpAP----AMLFDAAEdSKPQQ----QQKAILDLFRSRNIATITImSLLLWFFTSVGYfGLS	229
<input checked="" type="checkbox"/>	Query_10003	277	KDEAFVIEEKAAKENKVEVPNEIyeQLVDEVAEKkQDEMAASQPAATVFDLLRYPNLRKTLIfFDWfVNSGvVYGLS	356
<input checked="" type="checkbox"/>	Query_10004	279	LSEACEVLNDIAHQrWNNTKARF-----TTKDISAIHKQEKQGFYWFYHLfSTKRLAKQsCLQIISVLTYAMVSNYL	351
<input checked="" type="checkbox"/>	Query_10001	361	LDAPNLHGDAYLNCfLSALIEIPAYITAW---LLRLTPRRYIIAAVLfWGGGVLLfIQLV-----PVDYyFLS	426
<input checked="" type="checkbox"/>	Query_10002	230	LNTPNLHGDAYINCfLSAVIEVPAYIIAW---LLRSLPRRYSIGTLVLGGGVLLfINLV-----PTDLNVLs	295
<input checked="" type="checkbox"/>	Query_10003	357	WNTNLLGGNQLVNFMIsgAVEIPGYTLLL---FTLNRWGRRSILCGTMMVAGISLLATIFV-----PSDMNLI	422
<input checked="" type="checkbox"/>	Query_10004	352	FTVAGLHDSPiISTLIDGVLRLfIPIIIIVifdLMVPSfGRKIQfLGSLVIEGILfGVVIALvatgtctydsKAVNIlVIV	431
<input checked="" type="checkbox"/>	Query_10001	427	IGLVMLGKfGITSAFSMLYVfTAELyPTLVRNMAVGv---TSTASRVGSIIAPYfVYLGAyNRMLPYIVMGSLTLVIGIL	503
<input checked="" type="checkbox"/>	Query_10002	296	VCLVMLGKfGITAfSMLYVfVNELyPTLVRNMAVGa---TSTASRLGSIIAPYfVYLGAyDRYLPYIVMGSLTLVIGIL	372
<input checked="" type="checkbox"/>	Query_10003	423	VACAMIGKLAITSSyGTIYIFSAEQfPTVVRNVLGa---SSMVARVGGILAPYKLLGEIWRPLPLIICGALSITAGLL	499
<input checked="" type="checkbox"/>	Query_10004	432	TTMINDCIFWIN-----IVQITTQRyPTVIRCVAFGF1hsFRHIGAIIGfLILKPLLTSTWPVGAfVIPEAMIVLTILVG	506
<input checked="" type="checkbox"/>	Query_10001	504	TLFFPESLGMTLPETLEQ-----MQKVKWFRSGKkTRDSMETEENPKVLITAF-----	551
<input checked="" type="checkbox"/>	Query_10002	373	TLFLPESYGsALPESFEQ-----MMKVKCFRNGQQTtGIRNSKESPKTLITTL-----	420
<input checked="" type="checkbox"/>	Query_10003	500	SLLLPEtLNKpMPETIED-----GENfGKKPAPQETAEEGGTQELSGMLNGKSG-----	548
<input checked="" type="checkbox"/>	Query_10004	507	FFFQPEtKGKALMDQmVEanygrleneIpralmrIaaGHRVDQSEtRQQRKDMESAKAAELMGKKVSpwvfkEKdsgp	586

Supplementary Figure 2. Alignment of carnitine transporter OCTN1 and homologs in different species. Human (OCTN1, Query_10001), Chicken (OCTN1, Query_10002), *Drosophila* (NP_001262908.1, Query_10003) and *C. elegans* (T08B1.1, Query_10004) were aligned by Multiple Alignment tools from NCBI website. Conserved domains (A) and corresponding amino acids (B) were shown in red.