Supplementary Information for:

Assessment on the oil accumulation by knockdown of triacylglycerol lipase in the oleaginous diatom *Fistulifera solaris*

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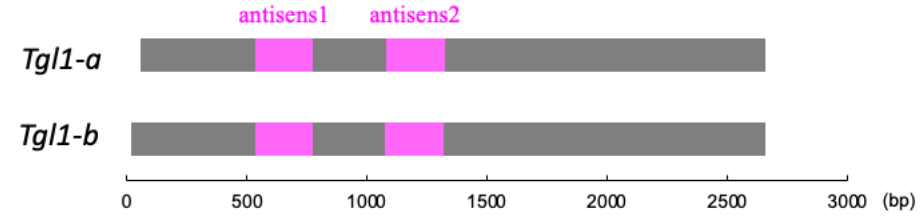

[antisens1]

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Tgl1-b      AGTATTGGACGCAATAAATTTGGTCTCTTACATGAAGGATTGTTCACCAAAGCACGGGCC    540
Tgl1-a      AGTATTGGACGCAATAAATTTGGACTCCTTCATGAAGGATTGTTTACCAAGGCCCGGGCC    483
antisens1   ------------------------------------------------------------CC      2
                                                                          **

Tgl1-b      GGTACCAAAGTCTTGGTTGAAACCTATCACAATGTCATTTGTGCCGCTTTGGATTTTGTC    600
Tgl1-a      GGTACCAAAGTCTTGGTAGAAACCTATCACAATGTCATTTGTGCCGCCTTGGATTTTGTC    543
antisens1   GGTACCAAAGTCTTGGTAGAAACCTATCACAATGTCATTTGTGCCGCCTTGGATTTTGTC     62
            ***************** **************************** ************

Tgl1-b      TGTGATGCACAAGTCTTACCGGATCAAGATCCGATTCCCACCGAAGCACGATTGGCTTTT    660
Tgl1-a      TGTGATGCCCAAGTGTTACATGATCAAGATCCGATTCCCACTGAAGCACGATTGGCCTTT    603
antisens1   TGTGATGCCCAAGTGTTACATGATCAAGATCCGATTCCCACTGAAGCACGATTGGCCTTT    122
            ******** ***** ****  ******************** ************** ***

Tgl1-b      TTCAATGAAACACGCCATTCGTATGGTCGGACCGCTCTCTTGTTGAGTGGTGGAGCCGCC    720
Tgl1-a      TTCAATGAAACACGACATTCGTACGGTCGGACGGCGCTCTTGTTGAGTGGCGGAGCCGCC    663
antisens1   TTCAATGAAACACGACATTCGTACGGTCGGACGGCGCTCTTGTTGAGTGGCGGAGCCGCC    182
            ************** ******** ******** ** ************** *********

Tgl1-b      TTGGGATTTTATCATGTCGGTGTCGTCCGGACCTTGATGGAAAATCGTCTCATGCCCCGC    780
Tgl1-a      TTGGGATTTTATCACGTCGGTGTGGTCCGGACCTTGATGGAAAATCGTCTCATGCCCCGG    723
antisens1   TTGGGATTTTATCACGTCGGTGTGGTCCGGACCTTGATGGAAAATCGTCTCATG------    236
            ************** ******** ******************************
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[antisens2]

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Tgl1-b      GCAGCCACGTGGTTGGATTTCTATTACAACACGGCCGGTGCCTTTCATGATATGAAATTG   1074
Tgl1-a      ACAGCCTCGTGGTTGGATTTCTATTACAACACGGCCGGTGCCTTTCATGATATGAAATTG   1023
antisens2   ------------------------------------------------------------G      1
                                                                          *

Tgl1-b      ACATTGATTGGATTCATGCCATTGACATTACGACGCATGACGGCGTTCTTGTATGACGTT   1134
Tgl1-a      ACATTGATTGGATTCATGCCATTGACATTGCGACGCATGACAGCGTTCTTGTATGACGTC   1083
antisens2   ACATTGATTGGATTCATGCCATTGACATTGCGACGCATGACAGCGTTCTTGTATGACGTC     61
            **************************** *********** ****************

Tgl1-b      TTGTCGGGAAGTCGACGGGCTTCCGATGTCTTTAAGAAGGATACCGACTATTTTCGCGAA   1194
Tgl1-a      TTATCGGGCAGTCGACGAGCGTCGGATGTCTTTAAGAATGATACCGATTATTTTCGCGAA   1143
antisens2   TTATCGGGCAGTCGACGAGCGTCGGATGTCTTTAAGAATGATACCGATTATTTTCGCGAA    121
            ** ***** ******** ** ** ************** ******** ************

Tgl1-b      TGTGTTCGCGCCAATGTGGGAAACTTTACATTTCAAGAAGCCTTTGATCGGACGGGACGT   1254
Tgl1-a      TGCGTCCGCGCCAATGTGGGAAATTTTACCTTTCAAGAAGCCTTTGATCGGACGGGACGT   1203
antisens2   TGCGTCCGCGCCAATGTGGGAAATTTTACCTTTCAAGAAGCCTTTGATCGGACGGGACGT    181
            ** ** ***************** ***** ********************************

Tgl1-b      ATTTTGAATATTGTCGTGACACCCATGAATAGCAGTGATCCGCCGCGTTTGCTCAATTAC   1314
Tgl1-a      ATTTTGAACATTGTCGTGACACCCATGAATAGCAGTGACCCGCCGCGTTTGCTCAATTAC   1263
antisens2   ATTTTGAACATTGTCGTGACACCCATGAATAGCAGTGACCCGCCGCGTTTGCTCAATTAC    241
            ******** **************************** ********************

Tgl1-b      TTGACGGCACCGCATGTCATGGTATGGAGTGCCGCCGTGGCCAGTAGTTCTTTGCCTGGT   1374
Tgl1-a      TTGACGGCACCGCATGTTATGGTCTGGAGTGCTGCCGTGGCCAGCAGTTCGTTGCCCGGT   1323
antisens2   TTGACGG-------------------------------------------------------    248
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Fig. S1 Sequence alignments of *Tgl1* gene (*Tgl1-a* and *Tgl1-b*) and antisense fragments.

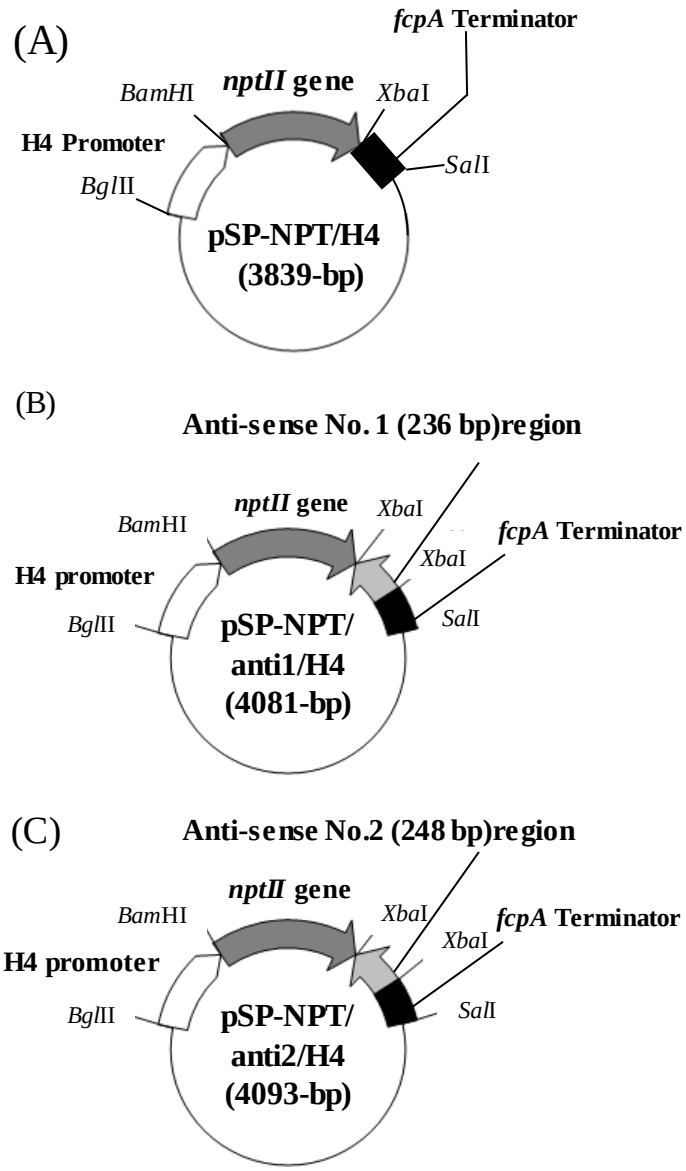

Fig.S2 Constructions of vectors used in this study. Restriction maps of the expression cassettes in plasmids pSP-NPT/H4 (A), pSP- ANT1 (B), and pSP-ANT2 (C).

Abbreviations: *H4* prmoter, histone H4 gene promoter from *F. solaris; fcp A* terminator, fucoxanthin chlorophyll *a/c*-binding protein A gene terminator from *P. tricornutum*.

Table S1 Primers used in this study

Primer name	Sequence (5'-3')	Use
Tgl1_anti_2F	AAATTTTCTAGACATGAGACGATTTTCCATCA	Cloning by restriction enzyme
Tgl1_anti_2R	AAATTTTCTAGACCGGTACCAAAGTCTTGG	
Tgl1_anti_3F	AAATTTTCTAGACCGTCAAGTAATTGAGCAAA	
Tgl1_anti_3R	AAATTTTCTAGAGACATTGATTGGATTCATGC	
anti2_fwd	TGATCTAGACATGAGACGATTTTCCATC	
anti2_rev	GTTTCTAGACCGGTACCAAAGTCTTGG	
anti2-1_fwd	GGTACCGGTCTAGAAACAACTACCTCGACTTT	
anti2-1_rev	CGGAGGCAGATCTGGTTCCCGCATAG	
anti2-2_fwd	ACCAGATCTGCCTCCGGTACTCTTAC	
anti2-2_rev	GTCTCATGTCTAGATCAGAAGAACTCGTC	Cloning by Gibson assembly
anti3_fwd	TGATCTAGACCGTCAAGTAATTGAGCAAAC	
anti3_rev	GTTTCTAGAGACATTGATTGGATTCATGC	
anti3-1_fwd	ATCAATGTCTCTAGAAACAACTACCTCGACTTT	
anti3-1_rev	CGGAGGCAGATCTGGTTCCCGCATAG	
anti3-2_fwd	ACCAGATCTGCCTCCGGTACTCTTAC	
anti3-2_rev	CTTGACGGTCTAGATCAGAAGAACTCGTC	
anti_seq_F	GAATATCATGGTGGAAAATGG	Confirmation of introduction of antisense sequence
anti_seq_R	CATGGTGAAGACGAGCTAGT	
RNAi_nptII_F	TGAACAAGATGGATTGCAC	Sequence analysis of Neomycin casette
RNAi_nptII_R	CAGAAGAACTCGTCAAGAAGG	
qPCR_GAPDH_F	ATTGGAGTCAATGGCTTTG	Quantitative RT-PCR to determine quantity of GAPDH gene expression level
qPCR_GAPDH_R	CCATGAACGGAATCGTACT	
qPCR_g13_anti2F	TTGGACTCCTTCATGAAGG	Quantitative RT-PCR to determine quantity of Tgl1 gene expression level
qPCR_g13_anti2R	GATCATGTAACACTTGGGCA	
qPCR_g13_anti3F	CATTCCAGTACCGTCACG	
qPCR_g13_anti3R	GACTGCCCGATAAGACGT	
qPCR_g10_anti2F	ATTGTTCACCAAAGCACG	
qPCR_g10_anti2R	GATCCGGTAAGACTTGTGC	
qPCR_g10_anti3F	CCATAGTACAGTCACGACCTC	
qPCR_g10_anti3R	GACTTCCCGACAAAACGT	

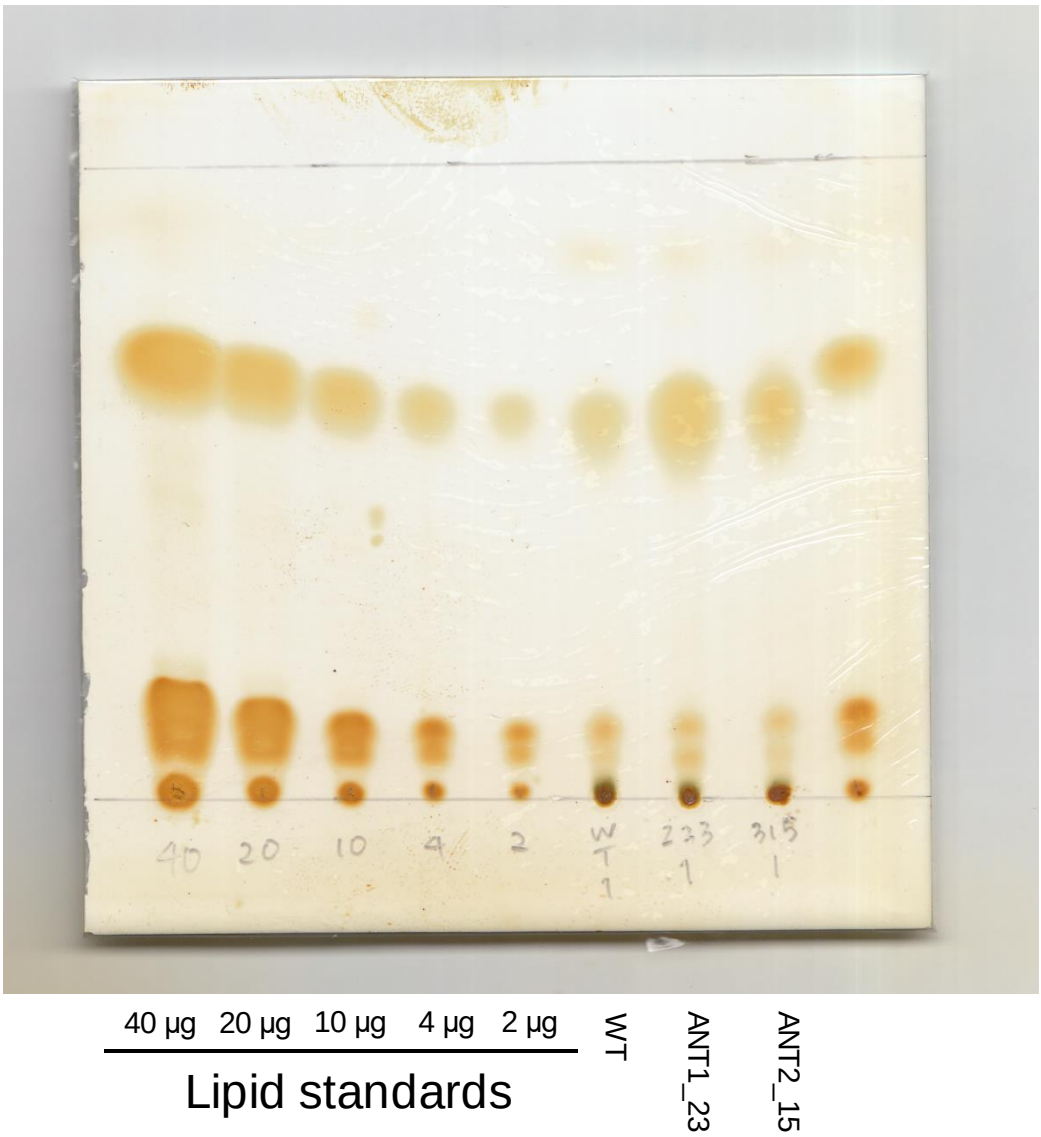

Fig. S3 Uncropped and non-inverted full-length image of the TLC plate shown in Figure 3 in the main text.