

A Supplemental Figure 1

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ABELF3 1 W R -----G K E K I L I E P F P R L H V N D A K G G P R A P P R N K M A L Y E Q L S P S Q R G C D
BdELF3 1 M R R G G G P P A G K E D K V G P L F P R L H V N D L T K G G P R A P P R N K M A L Y E O F S V S O R E H P
SVELLF3a 1 W R G G A G G G R E D Q G K V G P L F P R L H V S G A K G G G P R A P P R N K M A L Y E O F V S R P F S S
SVELLF3b 1 M R R G A G K ---D E A D K V G G P L F P R L H V N D T V K G G P R A P P R N K M A L Y E O F S V S H R F S A

ABELF3 52 H T M N S R S N N T -----S I L W H P G P S S Q P C G V R N L S V -----Q H
BdELF3 51 H R A S -----S S A L S S A S P C I G S D R P L F P S F C V P S N E B A R S S H
SVELLF3a 61 S A A S T R A -----A G S L V S T S A S Q I X S Y S R P L F D E H D V S N G P A H S S E K
SVELLF3b 56 A A A P A P A P A P A P W H A H R P A P G A A S A V P S T S A S A G G S D R P L F P S F C V S T E P V R S S H

ABELF3 86 I D S S A N O ---A T -----E R F V S Q I -----S E M E N V R S S A O H D O R K A W R E B E R
BdELF3 99 I N I N S N G R D G N A T R V E S G R S T O L K S K D V Y A A G S T A E C S S Q R E N S V K N S S G K A L I N D D
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SVELLF3b 116 N A N S N G R A G N A T R E S G R S T I L K S K D V A G F T A E C S S R H R E N I T K N S S G K A L I N D

ABELF3 125 D F A V P Y I N S R R S Q S H G R T S G L E R E K H T E M V A E S H S I R F O E V N O T G S R Q N V C L A I C S
BdELF3 158 D F T V P S V F C G W P E S T O E V Y R I Q E K S T A E P S T S P Y K S G E ---T M S K S S A K C S
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SVELLF3b 175 D F T V P S V Y S G I P P H S T O E ---K F T P P P T K S P Y K S I E -----A M S K S S A K C S

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SVELLF3b 219 N T D K I T H E G Y V S P A H S M G S P I K E K E P T K V R I D L I E E R I S S P O I S K E S G L E P K S S

ABELF3 221 S H P R N D N Y N A S L F Q S R N R Y R D G G T R -----I K D L T N G A E S H I A T I N H S Q E G H G S P
BdELF3 268 H R D K L S D L N Y D K O H A R T E H O A R R I N N E N A E S O N A F K A N G P S S ---T N ---E R N G A S
SVELLF3a 276 M G P N A T N I D S I D N E H G N S R G C P T S M N G S S M E A K M P T T T R N T V S G K P C T D I N ---S N K N S
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ABELF3 274 E D I D N D R E X K S R C A S L Q I N E A S D F V S D S M W D S I I N S I P D D V Y G I L G Q R F W R
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SVELLF3b 392 A R A T A V N O O R F A V O V F E L H R L I K Y O K L I A A S P H I L I E G P C L D K A L A S K ---K K L A G

ABELF3 393 F L V K E P I P H Y V Y K O G G S E R T D O H K E S S A N V V -----G R S N Q G H H Q S N Y M E
BdELF3 436 N I E K O E P ---S A K N K D D A Q L T L L O Q E Y S K N I E G N O A S P I O D D V I V Y Q H N N O A S N G C D
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SVELLF3b 449 D A E K O H Q ---S A K Y K D D I O O F L O Q I E H S K N T E A Q O P S P I O D D V Y A A Q H N N O A A T A A V

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SVELLF3a 503 T S N P P W P A P A P D N K O N W C I N P F -----Q N O M I V P V M S P S E G L Y Y K P A G C P P A G S F L
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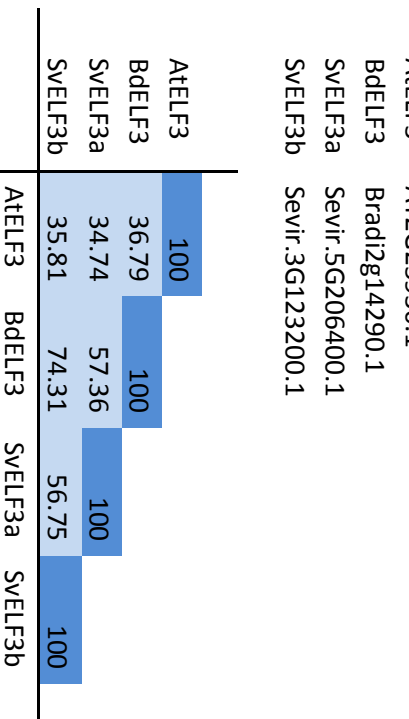
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SVELLF3a 607 E A B A S A V E Q Q S T A V P O F E G R A E Q S L I S C N S H -----S G C T ---W R F H
SVELLF3b 617 T V S A S A V E O V S H A A S H E N G H E O H S R S S C N M S N ---I R S E A I S A D I ---W R F H

ABELF3 592 R A E K S -R Q -I S T S S E G R Q G T S G ---S K S F R P E A A V D E D S N I N N P E Q T M T T T T T T R T T
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SVELLF3b 666 A S I D S E L Q S S A S S I F D R Q O G E G R G P A Q ---P E P S S ---S V A N G

ABELF3 648 V T O T I P D C G V T R V I K V V P H N A K L A S E N A A R T I Q S I O E R K R Y D S S K P
BdELF3 690 P O P S G S E N P G V I R V P H A T V T A S E S A A R T F R S I O M E R O O N D P ---
SVELLF3a 691 P O P S G S R O O N H V T R V P H N A Q T A S E S A A R T F R S I O M E R R O N D P ---
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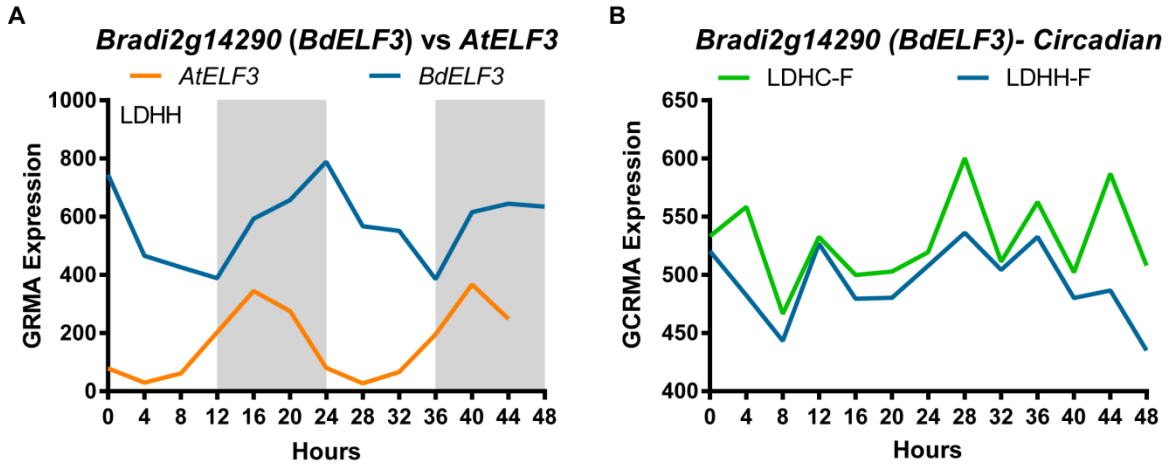
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BdELF3 Bradi2g14290.1

SVELLF3a Sevir.5G206400.1

SVELLF3b Sevir.3G123200.1

Supplemental Figure S1. Multiple sequence alignments of ELF3 orthologs (**A**) and percentage of identical amino acid sequences (**B**). Protein sequences of AtELF3 (AT2G25930.1), BdELF3 (Bradi2g14290.1), SvELF3a (Sevir.5G206400.1) and SvELF3b (Sevir.3G123200.1) were used for multiple sequence alignments and for generating percentage of identical amino acids by Clustal Omega alignment with default parameters.



Supplemental Figure S2. Diel and circadian expression of *BdELF3* from the DIURNAL database. GCRMA (GeneChip Robust Multiarray Averaging) values from the DIURNAL database (Mockler et al., 2007) were plotted to show time-course expression profiles of *Bradi2g14290 (BdELF3)* under either diel (**A**) or circadian conditions (**B**). Diel expression of *AtELF3* from DIURNAL database was used for comparison in (**A**). Shade boxes indicate dark periods. In (**B**), Circadian expression data was obtained by entraining plants with either photo- (LDHH) or thermo- (LLHC) conditions followed by sampling under the Free-Running condition (F) with constant light and temperature.

Diel Explorer

Welcome Sample Info Search and Browse Data Plot Data Adding Your Own Data Contact Us

Search Data with GENEID or GO

Search using small sets of GENEIDS

GENEIDS, Orthologs, or GO separated by a comma are allowed
example: **Sevir:2G310Z00.1,Sevir:1G000100.1**

Search using small sets of GO TERMS

example: **GO:00008270**

Search using small sets of ORTHOLOG GENEIDS

example: **AT3G17930.1,LOC_050195900.1**

refresh page to clear search

Search Data with File

Genes, Orthologs, or GO Selected with Search

Browse and Filter Data

Normalize Data

Yes

NO

Species:

All

Entrainment:

ldhnt

Benjamini-Hochberg Q-Value:

1e-06

Adjusted P-Value:

1e-06

Period:

All

Lag (Phase):

2

Download Selected Data

Show 25 entries

GENEID	BH Q	ADLP	PERIOD	LAG	AMPLITUDE	dataset	species	locusName
Sevir:1G324600.1	5.52e-09	4.37e-11	26	2	195.869285	ldhnt	setanaviridis	Sevir:1G324600
Sevir:2G080100.1	5.05e-07	9.95e-09	26	2	17.908540	ldhnt	setanaviridis	Sevir:2G080100
Sevir:2G310Z00.1	1.01e-12	5.19e-16	26	2	5909.517645	ldhnt	setanaviridis	Sevir:2G310Z00
Sevir:3G255600.1	6.17e-08	8.12e-10	26	2	173.735429	ldhnt	setanaviridis	Sevir:3G255600
Sevir:5G333300.1	3.07e-08	3.54e-10	26	2	3.692540	ldhnt	setanaviridis	Sevir:5G333300
Sevir:6G185200.1	4.70e-09	3.65e-11	24	2	1.399562	ldhnt	setanaviridis	Sevir:6G185200
Sevir:9G089300.1	2.31e-08	2.52e-10	26	2	3.249368	ldhnt	setanaviridis	Sevir:9G089300
Sevir:9G175700.1	4.18e-10	1.73e-12	26	2	1316.979309	ldhnt	setanaviridis	Sevir:9G175700
Sevir:9G369500.1	1.01e-07	2.50e-09	28	2	2.346460	ldhnt	setanaviridis	Sevir:9G369500

Showing 1 to 9 of 9 entries

Previous 1 Next

Diel Explorer

Welcome Sample Info Search and Browse Data Plot Data Adding Your Own Data Contact Us

Plot Data

Warning: Attempting to plot too much data on line graph will be slow/unresponsive and messy.

Plot Selected Data as Line Graph

Plot Selected Data as Heatmap

Color Line Graph By

Dataset

GENEID

Scale Heatmap

Row

Column

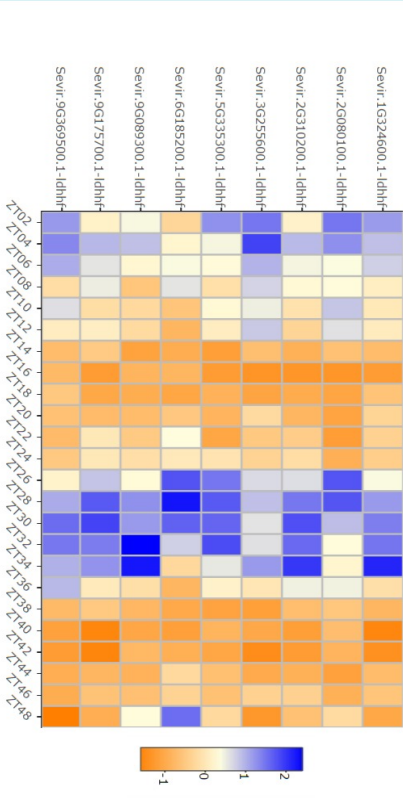
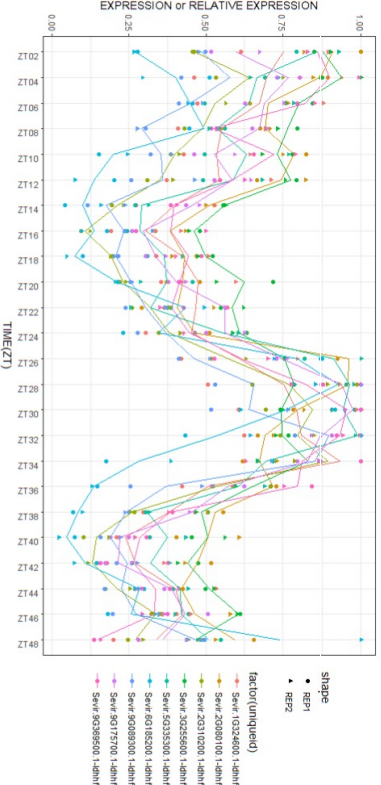
Average Replicates

Yes

No

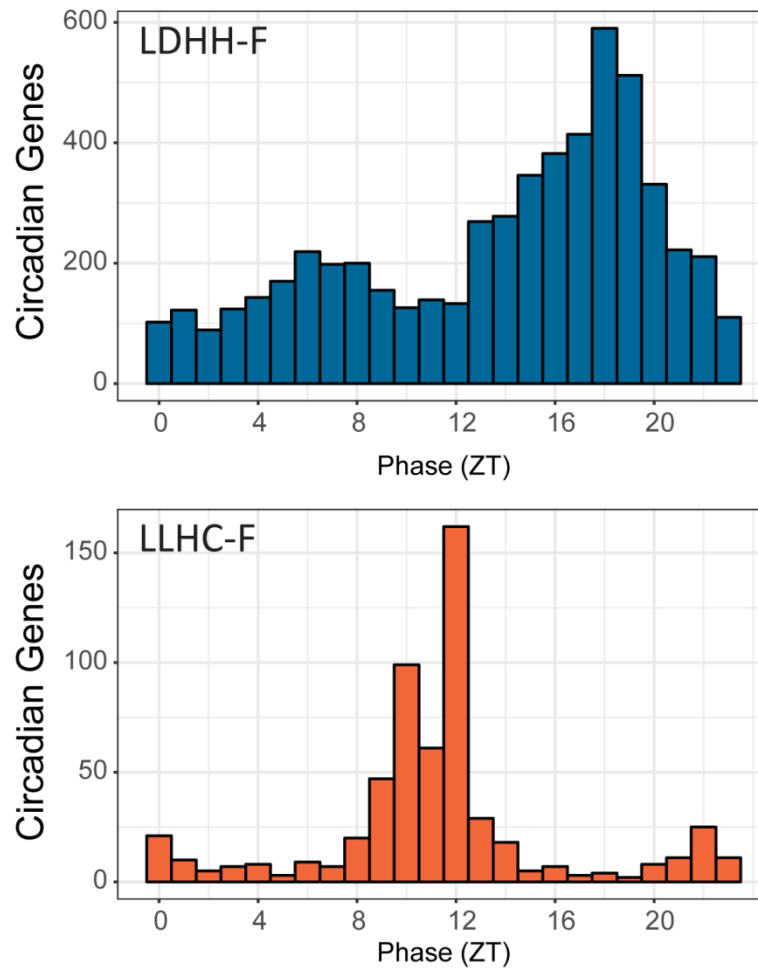
Download Line Graph

Download Heatmap



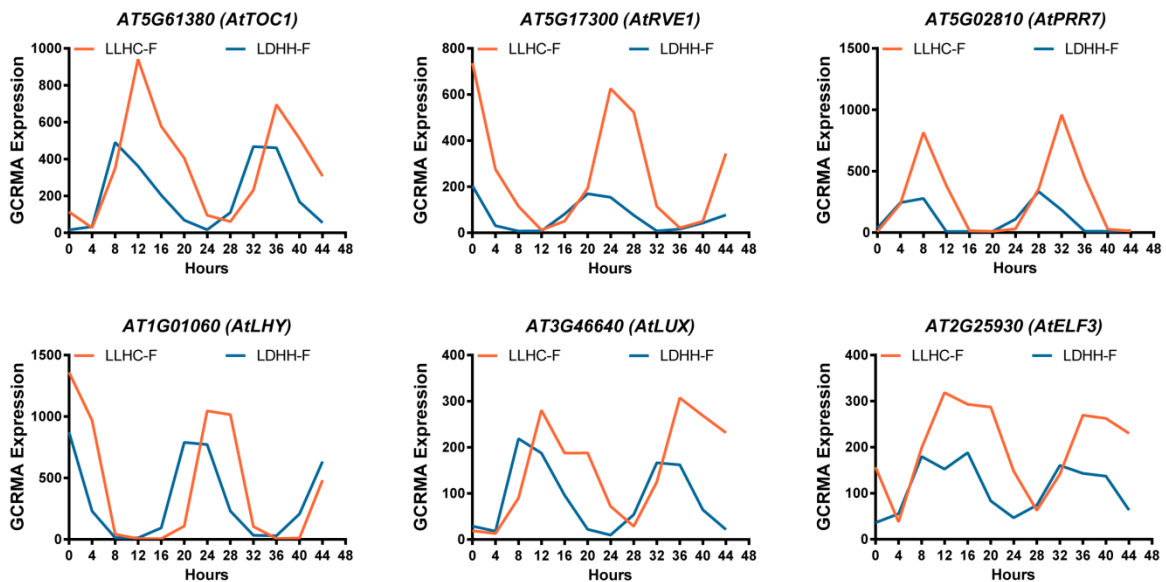
Supplemental Figure S3. Example of the Diel Explorer interface. The search interface (left) and plotting interface of Diel Explorer are shown (right). Users can search by gene or ortholog id, or by gene ontology term. Alternately, users can filter data by period, phase (lag) or significance cut offs. Data can be plotted in a line graph or heatmap.

Phase of Circadian Genes in *S. viridis*

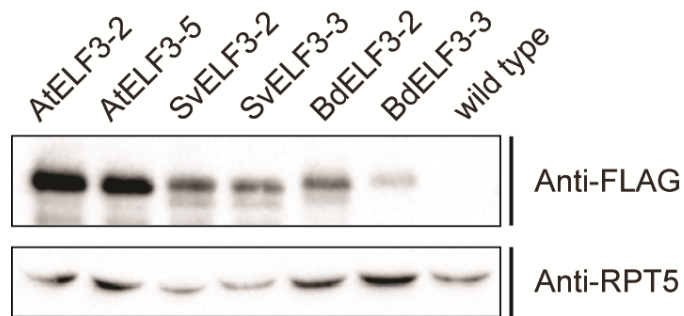


Supplemental Figure S4. Summary of circadian regulated genes in *S. viridis*.

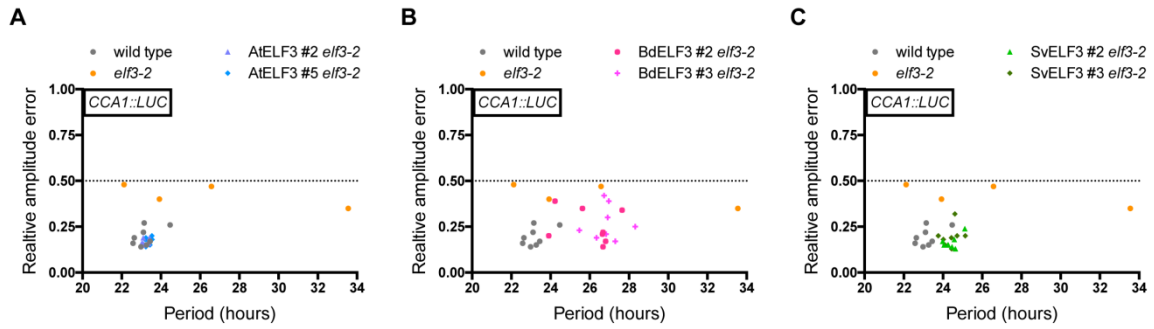
Distribution of circadian regulated genes in *S. viridis* was plotted by their phases, with the y axis showing the number of genes considered significantly (Bonferroni Adjusted P-Value < 0.001) cycling under photo- (LDHH) or thermo- (LLHC) entrainment in *S. viridis* followed by free-running condition (F).



Supplemental Figure S5. Circadian expression of selected *A. thaliana* clock genes from the DIURNAL database. GCRMA (GeneChip Robust Multiarray Averaging) values were plotted to show time-course expression profiles of selected *A. thaliana* clock genes under either photo- (LL23_LDHH) or thermo-entrainment (LL_LLHC) from the DIURNAL database (Mockler et al., 2007). Each gene cycles with a correlation of > 0.9 when compared to a best fit model (24-hour rhythm).



Supplemental Figure S6. Anti-FLAG western of ELF3 transgenic lines used for complementation analysis. Representative blot of protein extracts from day 12 seedlings taken at Zeitgeber time 12 grown under 12-hour light :12-hour dark growth conditions at 22 °C that were probed with FLAG antibody to detect the 3xFLAG epitope. RPT5 is used as a loading control.



Supplemental Figure S7. Relative Amplitude Error vs period plots. The periods and relative amplitude error (RAE) of 8 AtELF3 *elf3-2* (**A**), BdELF3 *elf3-2* (**B**), and SvELF3 *elf3-2* (**C**) seedlings were plotted along with wild type and *elf3-2* mutants (Note, only 4 of 8 *elf3* seedlings has measurable rhythms). RAE=0.5 was used as a cutoff (dotted line), above which a seedling is not considered rhythmic (Plautz et al., 1997). Note that wild type and *elf3* mutant data were reproduced on all plots for comparison purposes.