SUPPORTING FIGURE LEGENDS

Figure S1. The *wdr-23* promoters are active in multiple tissues. Fluorescent micrographs of *Pwdr-23a::GFP* (A) and *Pwdr-23b::GFP* (B) worms. Scale bars equal 50 μm.

Figure S2. Screen shots captured from the genome browser of WormBase (WormBase 2012). The track above the gene models plots sequence reads from modENCODE chromatin immunoprecipitation sequencing. (A) Approximately 160 kb of chromosome I centered on *wdr-23*. (B) Approximately 16 kb of chromosome I centered on *wdr-23*. The *wdr-23* promoter received a *q*-score of $2.5 \times 10^{-289}$.

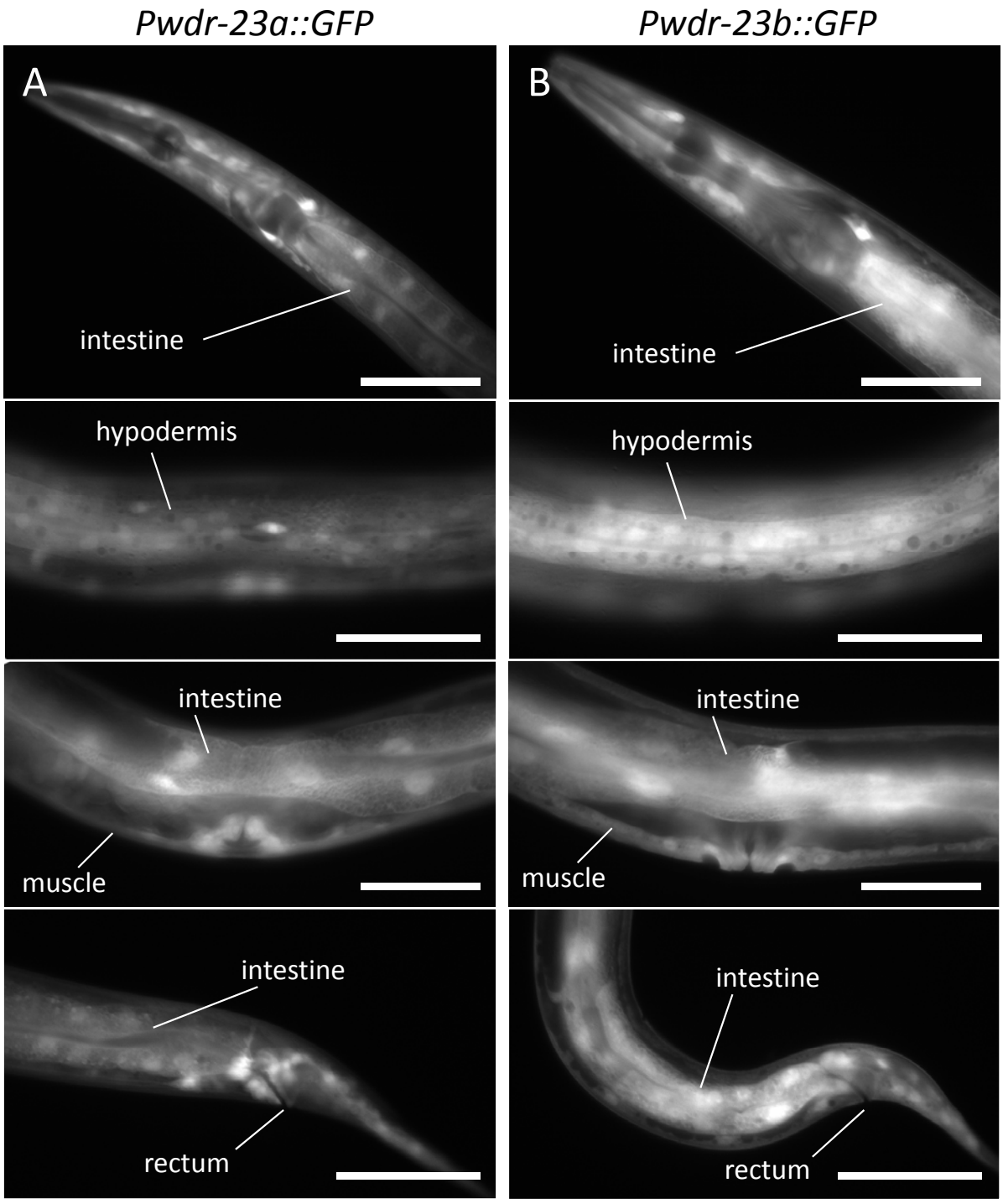
Figure S3. Sequences of probes used for electrophoretic mobility shift experiments.

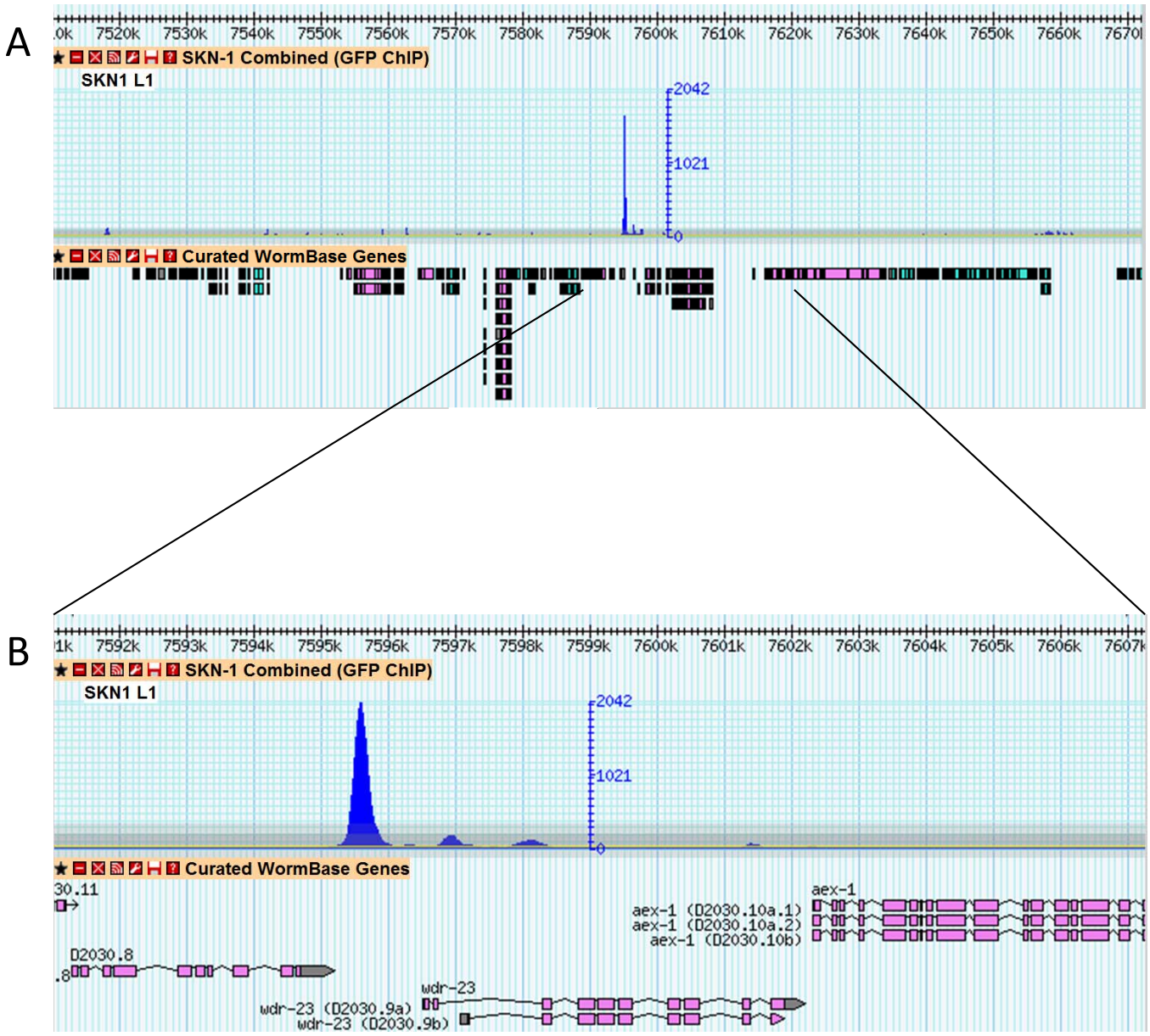
Figure S4. The *wdr-23b* promoter is activated by stress *via* SKN-1. (A) Paired brightfield (left) and fluorescent (right) micrographs of *Pwdr-23b::GFP* worms treated with RNAi and acrylamide as indicated on the left side of the micrographs. Scale bars = 50 μm. (B) Paired brightfield (left) and fluorescent (right) micrographs of worms expressing *Pwdr-23b::GFP* reporters with SBE1-3 mutated as in Figure 3. Some of these worms were exposed to acrylamide as in (A). Scale bars = 100 μm.

Figure S5. Single copy insertions of genomic *wdr-23* constructs rescue *wdr-23(tm1817)*. Paired brightfield (left) and fluorescent (right) micrographs of wildtype and *wdr-23(tm1817)* worms expressing *Pgst-4::GFP* with or without single copy insertions of *wdr-23* rescue constructs. Scale bars = 50 μm.

Figure S6. Feedback *via wdr-23* regulates basal and stress-induced gene expression. (A) Relative fluorescence of *Pgst-4::GFP* over a range of juglone concentrations. The means at all concentrations are significantly different from each other, $P < 0.001$. (B) Relative *Pgst-4::GFP* induction over time in worms with wildtype and mutated (-SBE) *wdr-23* promoters during exposure to 25 μM

juglone. $P < 0.0001$ for all time points after 2 hours. (C) Relative *Pgst-4::GFP* induction over time in worms with wildtype and mutated *wdr-23* promoters during exposure to four concentrations of acrylamide. Values are mean ± standard error. Fluorescence levels are significantly different between the two strains at all concentrations and time points after 4 hours ($P < 0.05$). (D) Dose-response curves for relative *Pgst-4::GFP* fluorescence after 7 h of acrylamide exposure in worms with wildtype and mutated *wdr-23* promoters. Data are from Figure S6C. Fluorescence levels are significantly different between the two strains at all concentrations ($P < 0.001$). (A-D) Values are means ± standard errors ($n = 16$ wells of a 384 well plate). (E) Effect of *wdr-23* feedback, plotted as *Pgst-4::GFP* induction in worms with mutated *wdr-23* promoter relative to worms with wildtype *wdr-23* promoter, versus the log of acrylamide concentration. Data are from Figure S6D. $P < 0.001$, 1.8 mM versus 0.9 and 7.0 mM.

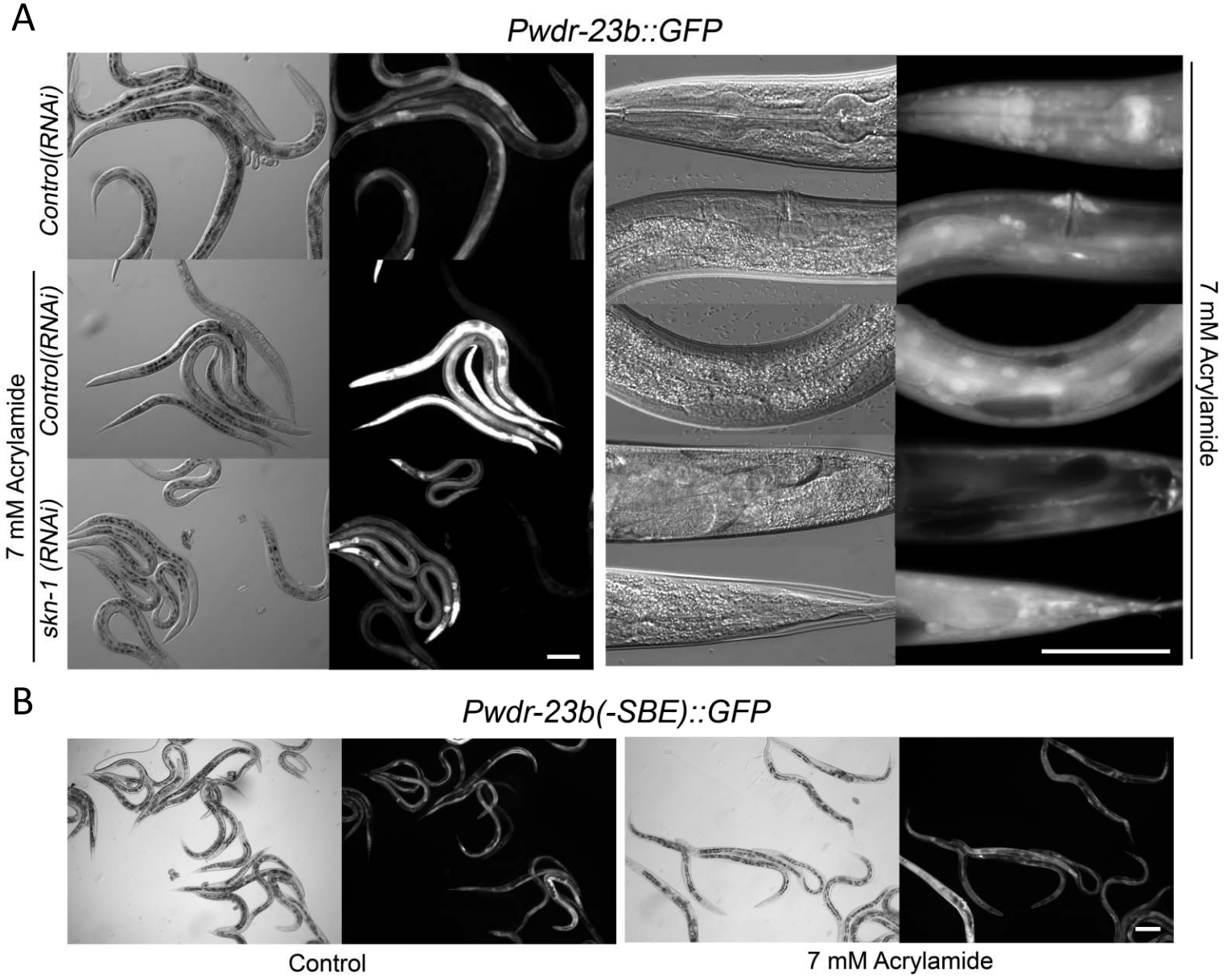

*Pwdr-23a::GFP*
*Pwdr-23b::GFP*
A
B
intestine
intestine
hypodermis
hypodermis
intestine
intestine
muscle
muscle
intestine
intestine
rectum
rectum

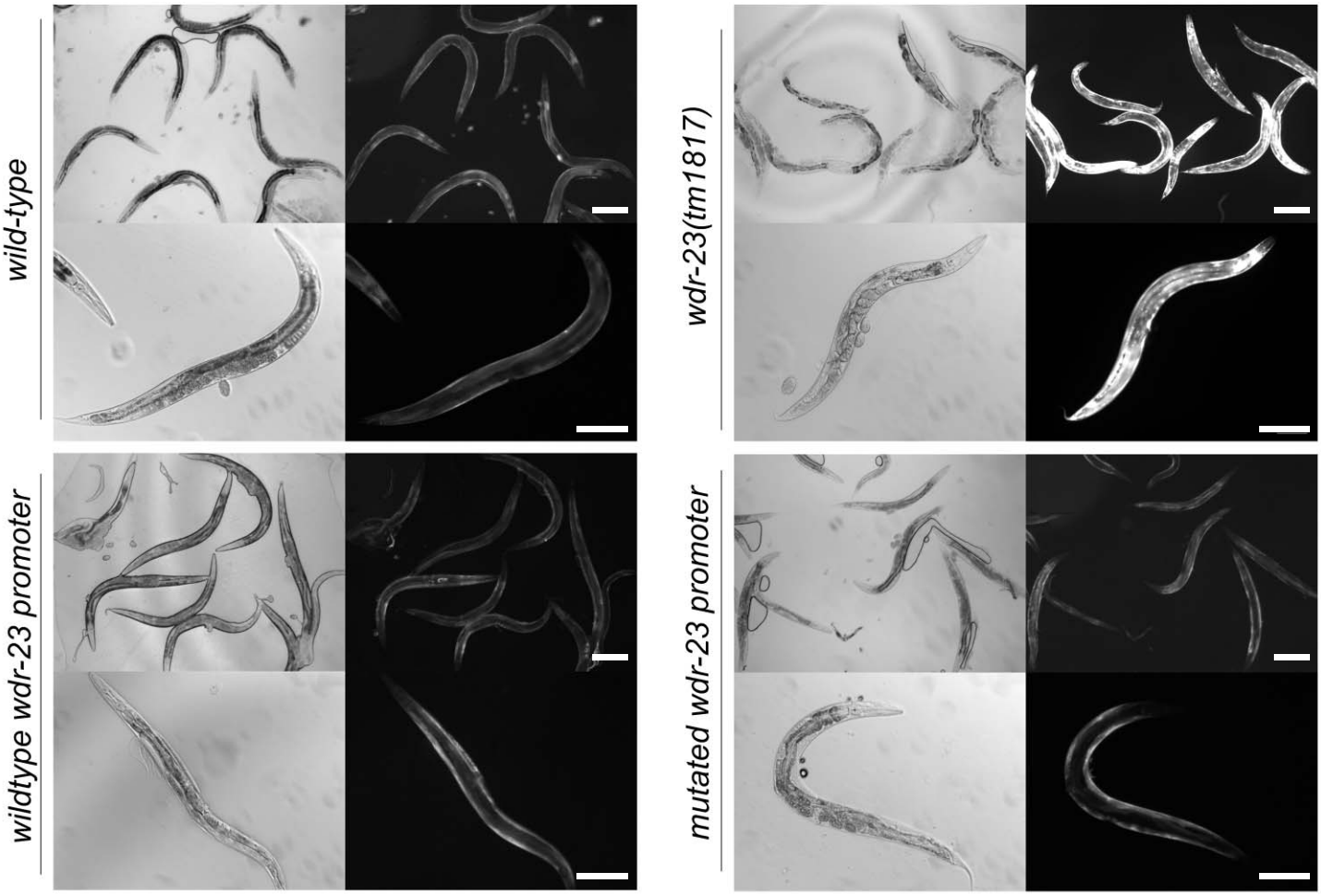

A
SKN-1 Combined (GFP ChIP)
SKN1 L1
2042
1021
0
Curated WormBase Genes
B
SKN-1 Combined (GFP ChIP)
SKN1 L1
2042
1021
0
Curated WormBase Genes
aex-1
aex-1 (D2030.10a.1)
aex-1 (D2030.10a.2)
aex-1 (D2030.10b)
D2030.8
wdr-23
wdr-23 (D2030.9a)
wdr-23 (D2030.9b)

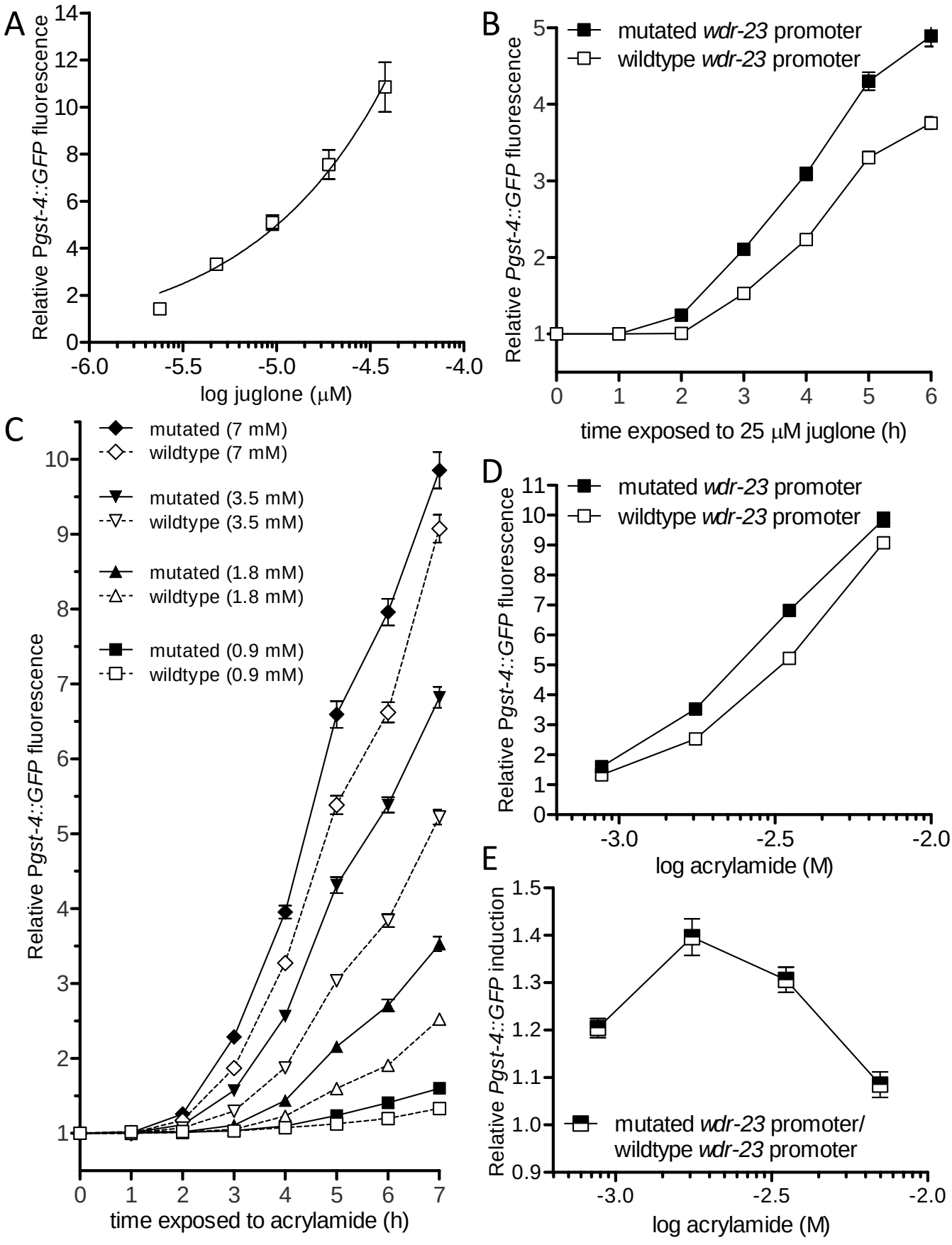
Self-annealing oligonucleotides used in electrophoretic mobility shift experiments

| Oligo name | Sequence (5' → 3') |
|---|---|
| SBE1 | GCCTCCTCGCGGTGAATTGTCATCATTTTTGTCAGCGT |
| | ACGCTGACAAAAATGATGACAATTCACCGCGAGGAGG |
| SBE2 | TTTGTGTGTCTCTCTAATATCATCATGTGTTTTATCGA |
| | TCGATAAAACACATGATGATATTAGAGAGACACACAAA |
| SBE3 | TTATTCAATTAAATGATGATATTTAATATAGAATCAGT |
| | ACTGATTCTATATTAAATATCATCATTTAATTGAATAA |

The SKN-1 binding elements are underlined


A
Pwdr-23b::GFP
Control(RNAi)
Control(RNAi)
skn-1 (RNAi)
7 mM Acrylamide
7 mM Acrylamide
B
Pwdr-23b(-SBE)::GFP
Control
7 mM Acrylamide


wild-type
wdr-23(tm1817)
wildtype wdr-23 promoter
mutated wdr-23 promoter


A
Relative Pgst-4::GFP fluorescence
log juglone (μM)
B
mutated wdr-23 promoter
wildtype wdr-23 promoter
Relative Pgst-4::GFP fluorescence
time exposed to 25 μM juglone (h)
C
mutated (7 mM)
wildtype (7 mM)
mutated (3.5 mM)
wildtype (3.5 mM)
mutated (1.8 mM)
wildtype (1.8 mM)
mutated (0.9 mM)
wildtype (0.9 mM)
Relative Pgst-4::GFP fluorescence
time exposed to acrylamide (h)
D
mutated wdr-23 promoter
wildtype wdr-23 promoter
Relative Pgst-4::GFP fluorescence
log acrylamide (M)
E
Relative Pgst-4::GFP induction
mutated wdr-23 promoter/
wildtype wdr-23 promoter
log acrylamide (M)