

Supplementary Information

LED based real-time survival bioassays for nematode research

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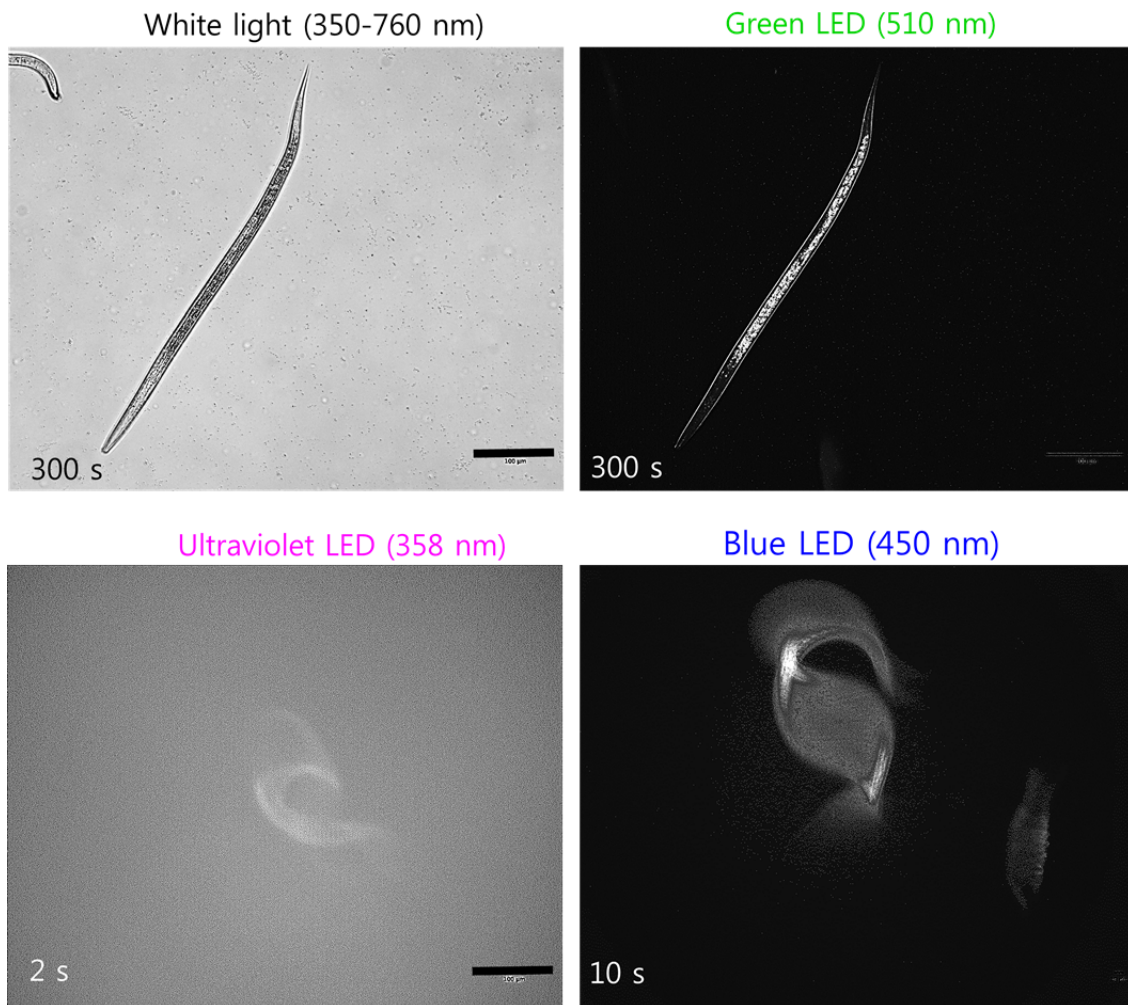
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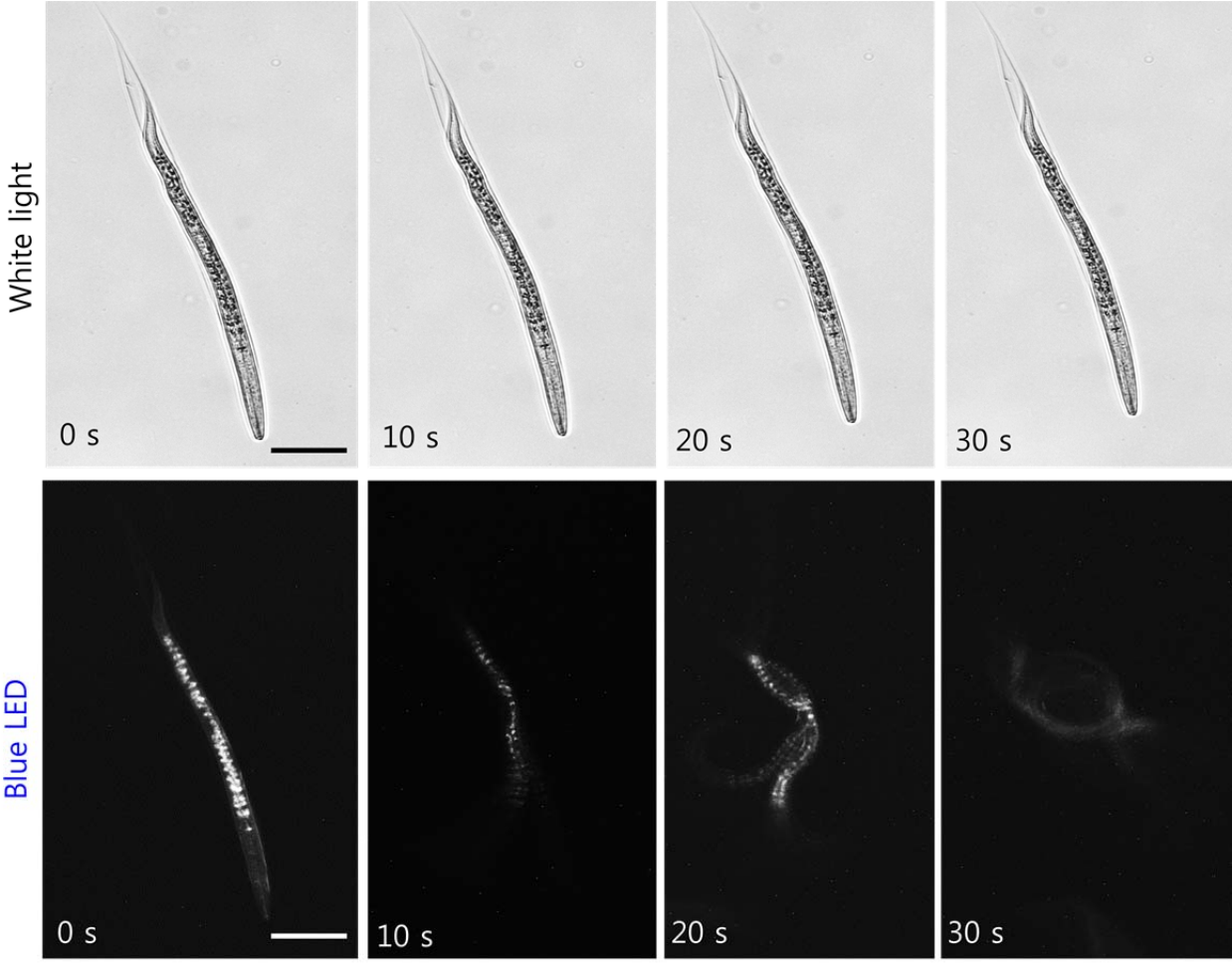
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Running Title: LED Based Real-Time Nematode Bioassays

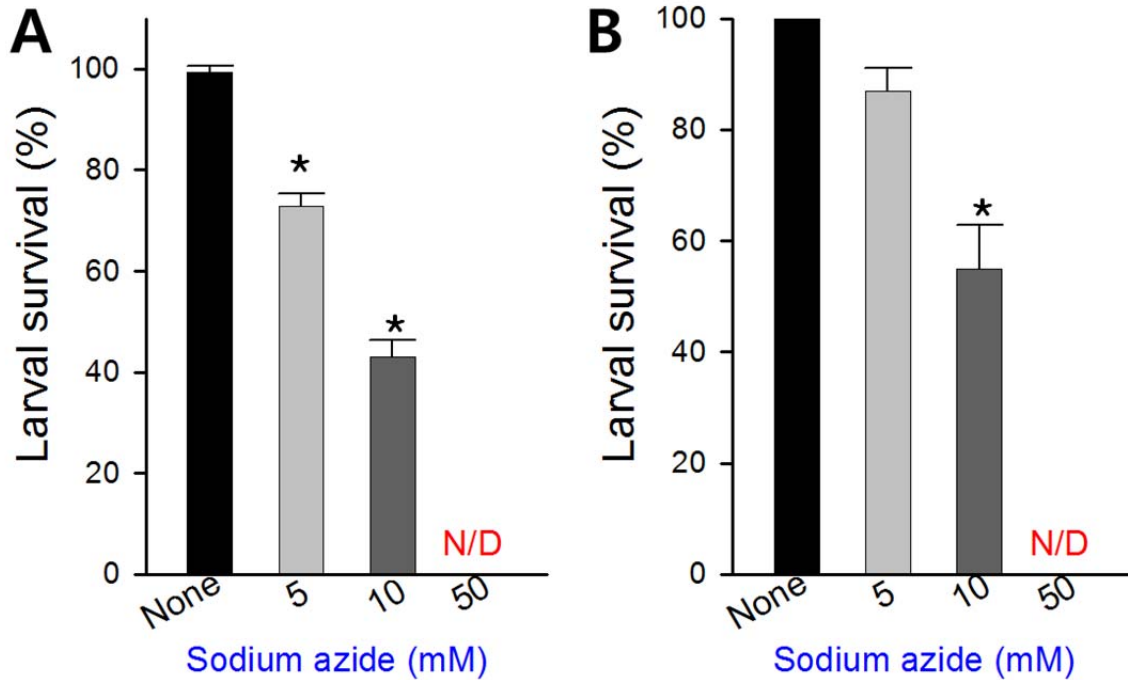
Supplementary Figure S1. Effect of various LED lights on *C. elegans* dauer stage. The dauer was captured after 300 s under bright-field and green LED to which it did not respond, while rapid response was noted when captured under UV LED (2 s) and blue LED (10 s). Scale bar: 100 μ m.



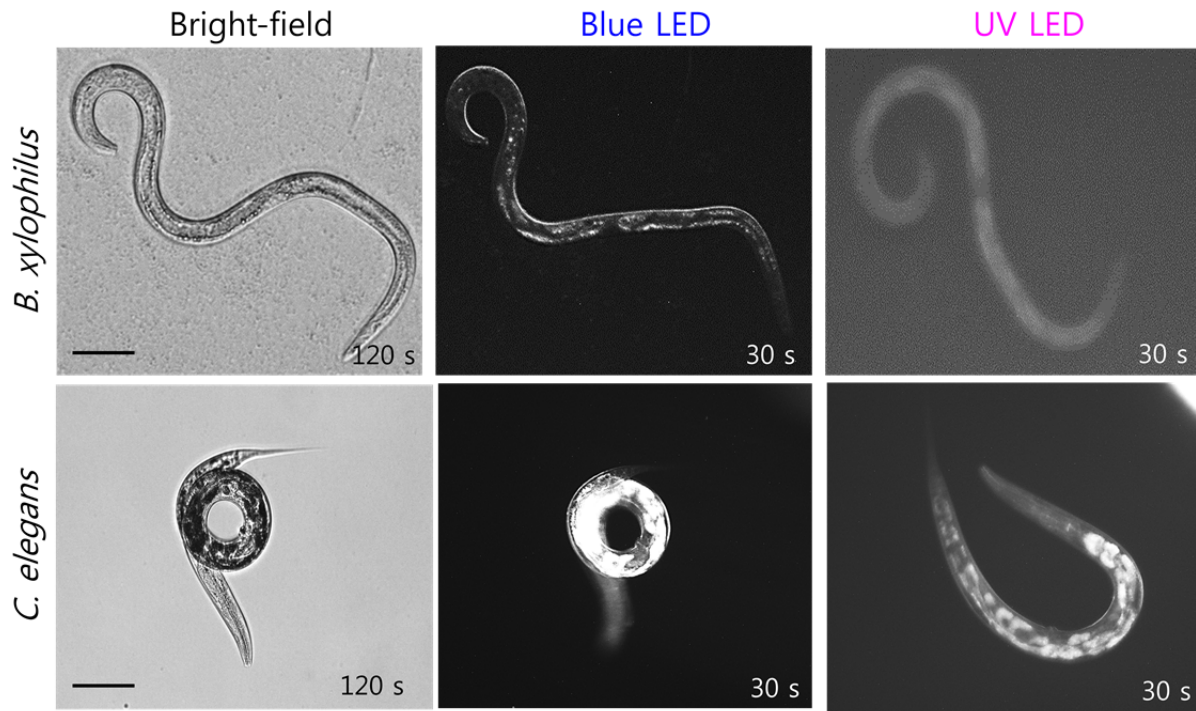
Supplementary Figure S2. Effect of blue LED light on a molting J2 stage *C. elegans*. During molting, the nematode sheds its external skin, and process is gradual with no active motion recorded. Under LED stimuli, rapid response was noted with in a few seconds. Scale bar: 50 μm .



Supplementary Figure S3. Effect of sodium azide on *C. elegans* (A) and *B. xylophilus* (B) larval stages. After 24 h the nematodes were removed from sodium azide solution and maintained in sterile distilled water or M9 buffer for 30 min for recovery. Then the nematodes were counted under UV LED stimulus. Graphs are plotted as the means \pm SE Ms. ** $P < 0.01$ vs. the non-treated controls, N/D: Not detected.



Supplementary Figure S4. Effect of blue and UV LED lights on *B. xylophilus* and *C. elegans* treated with 10 mM sodium azide for 24 h. After 24 h the nematodes were removed from the sodium azide solution and placed in sterile distilled water or M9 buffer for 30 min for recovery. Scale bar: 50 μ m.



Supplementary Figure S5. The representative image below is showing the effect of standard nematicides (25 $\mu\text{g/mL}$) namely levamisole, ivermectin, and abamectin on synchronized larval stages of *B. xylophilus*. The nematodes treated with levamisole appeared coiled, while the groups treated with abamectin and ivermectin appeared straight. Insets show a single larva with the observed phenotype. Scale bar: 100 μm .

