



**Supplemental Figure 1.** A.) Positive control identification for *hsp-4p::GFP* activation. For SJ4005 *hsp-4p::GFP* assessment, heat stress treatments of *C. elegans* in CeHM at 30°C for 1, 3 and 5 hours did not induce a change in GFP levels while 30 µg/ml tunicamycin resulted in an average 1.7x increase in expression. Therefore, tunicamycin was utilized as the positive control for UPR<sub>ER</sub> stress. N≥3, Error bars: standard error of the mean (SEM). B.) Time-of-Flight (TOF) testing for GFP strains. Organismal toxicity, as measured by reduced TOF (a size indicator), was used to limit the highest concentrations tested for this study. UPR biomarker strains were more sensitive to toxic stress from compounds tested here, as indicated by reduced TOF values, specifically for inorganic arsenic and organic mercury compounds. Number at bottom of each bar indicates sample size. Error bars: standard error of the mean (SEM).