



**STEP 1:**  
LOAD

**STEP 2:**  
POSITION

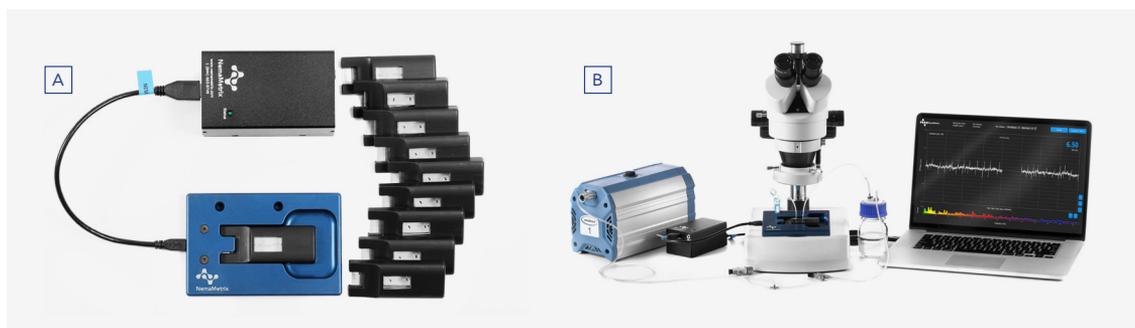
**STEP 3:**  
ACQUIRE

**STEP 4:**  
ANALYZE

# Get quantitative measurements from your worms in four steps

## ScreenChip System

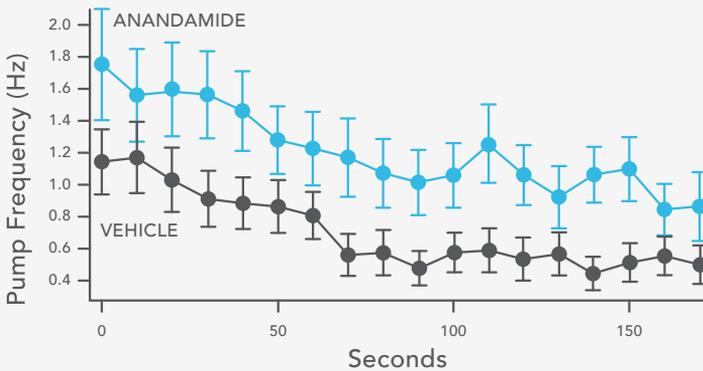
The ScreenChip System is an automatic worm screening and phenotyping platform that allows you to collect rapid and precise whole animal data. It enables you to quickly and reliably assess cellular and physiological responses to genetic, drug effects and other environmental changes. In addition, the system is designed to give you the freedom to focus on the meaning of your data by eliminating the need for countless hours of worm preparation and data acquisition.



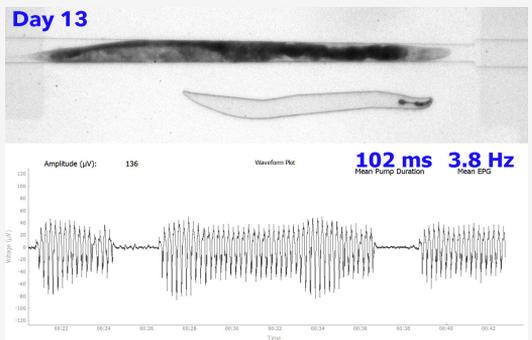
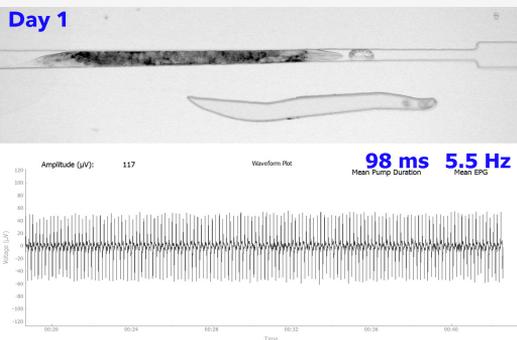
**Figure 1.** The ScreenChip system is the size of a multiwell plate (A) so it can fit on your microscope stage (B) and in your drawer. Rapidly measure and analyze your worms' phenotype with our open-source software.

## The ScreenChip System allows you to:

- Conduct phenotyping assays
- Perform compound/drug screening ( **Figure 2** )
- Quantify effects of aging and mutations ( **Figure 3** )
- Collect real-time measurements



**Figure 2.** The cannabinoid Anandamide induces hyperphagia in adult worms (blue dots). Mean pump frequency versus time in 10 s. bins (Anandamide, N = 27; Control, N = 41). Data are shown as mean  $\pm$  SEM. ANOVA, Treatment,  $F(1,66) = 7.26$ ,  $p = 0.009$ .

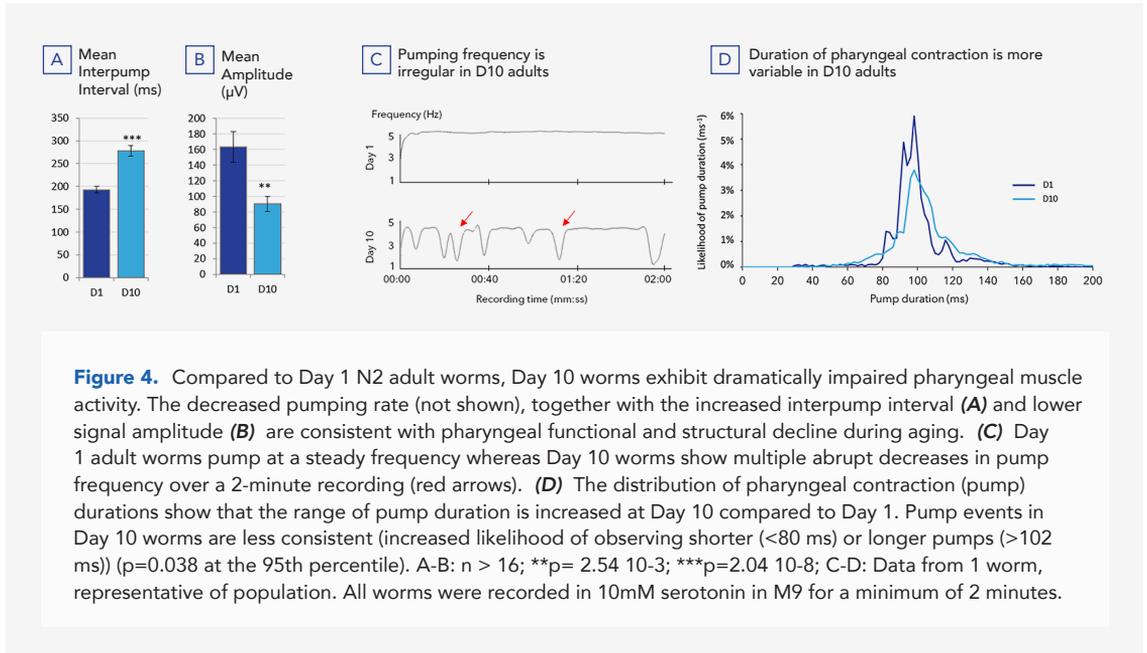


**Figure 3.** Comparison of adult *C. elegans* worms within the ScreenChip System. Day 1 and Day 13 worms were recorded in 40  $\mu m$  and 60  $\mu m$  channels, respectively. Recording pharyngeal activity uncovered a dramatic change in feeding activity, not only in pump frequency, but also in the temporal patterning of pumps.

# Benefits of using the ScreenChip System:

## Richer Data

The ScreenChip System enables you to ask and answer questions that are not possible with visual pumping assays. You can measure the pump frequency in real time (Figure 4). Additional data such as pump waveform shape, spike amplitude ratios, pump duration and interpump interval can be obtained with post-hoc analysis using NemaAnalysis software.



## Larger Sample Sizes

The ScreenChip System allows you to record from one worm at a time, up to fifty worms per chip. Larger sample sizes give you more confidence in your data.

## Faster Experiments

Load worms into the ScreenChip, move them into position and record for as long as you want. The ScreenChip system was designed to be used by all levels of researchers, no prior experience is necessary.

## No Guesswork

The acquisition software displays real-time data parameters during your experiment (Figure 5). Data acquired in the NemaAcquire software can be transferred seamlessly to the NemaAnalysis software for in-depth data analysis. Analyzed data for each worm can be easily exported in an Excel or other format.



**Figure 5.** Measuring real-time pump frequency using the NemaAnalysis software.

## Research areas

Results have been obtained using the ScreenChip System in the areas of:

- Aging and age-related diseases
- Cardiac arrhythmias
- Neurodegenerative diseases
- Drug screening & development
- Genomics & molecular genetics
- Developmental biology
- Environmental toxicology
- Signaling pathways & networks
- Human and animal parasitology

## Ordering Information

Product	Quantity	Cat. No.
ScreenChip System	1	SK100
ImagingChip System	1	ISK100
ScreenChip Cartridges	box of 10	SC10, SC30, SC40 or SC60
ImagingChip Cartridges	box of 10	ISC10, ISC30, ISC40 or ISC60
Vacuum pump	1	VAC100

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