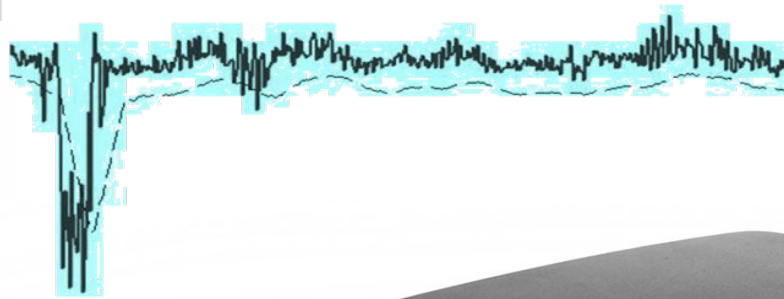


# Wmicrotracker ONE



**Wmicrotracker® ONE** features innovative technology that provides real-time information on the behavior and viability of small animal populations grown in liquid media. The "Equipment + Software" system is optimized for quick and easy quantification of locomotor activity in small organisms in 96- and 384-well microplates.



Many biological assays are complex to perform, requiring great manipulation skills and analysis time. This makes the work tedious and limits experiments based on their level of difficulty. Therefore, at Phylumtech, **our vision is to provide unique, agile, and real-time solutions that enable immediate, reliable, and reproducible results.** Founded in 2009 as a joint venture between the public and private sectors, we combine the latest advances in science and research with cutting-edge technologies

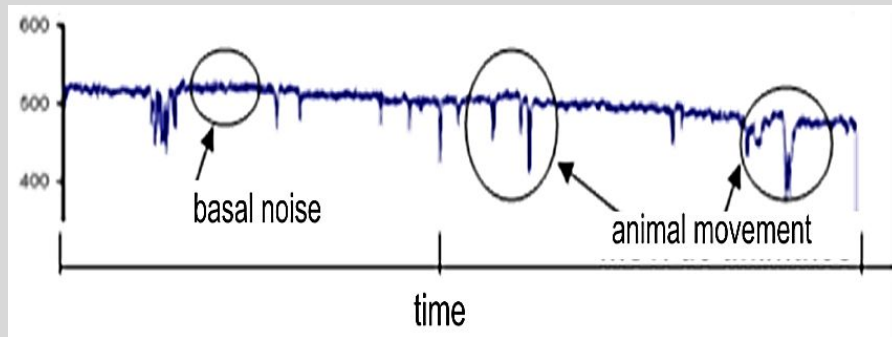
After years of experience, we are dedicated to developing accessible **High Throughput products.** Our first system was **Wmicrotracker® ONE**, which is based on non-invasive technology that uses infrared microbeams and photosensors. Developed in collaboration with CONICET and protected by international patents, ONE enables the quantification of locomotor activity of small organisms in a 96- or 384-well microplate format. The detection system is compatible with small organisms such as *C. elegans*, mobile-stage parasites, zebrafish larvae, *Drosophila* larvae, and *artemia salina*, among others.



## HOW IT WORKS?

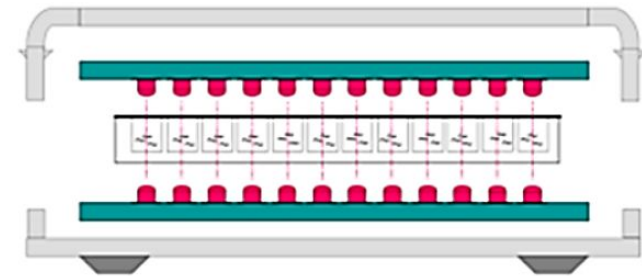
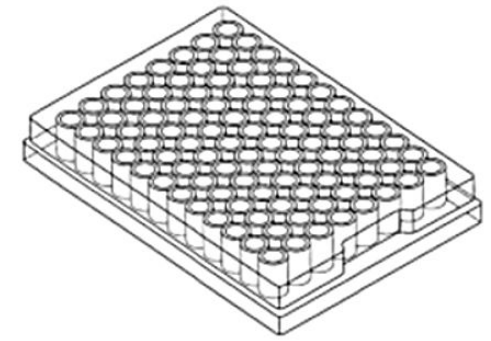
Based on an innovative system of 384 IR microbeams, the system detects the small interferences generated by the organisms present in the sample. In this way, a pattern of activity is recorded and processed using software specifically designed for real-time data acquisition.

The digital analysis of signal changes (proportional to light intensity) allows us to detect the movement of the organism as it passes through the beam of light. An algorithmic software calculates the number of activity events per unit time.

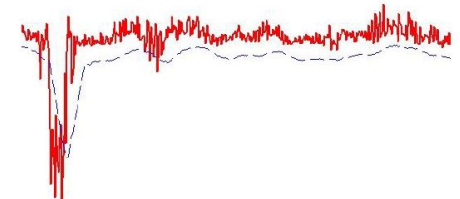
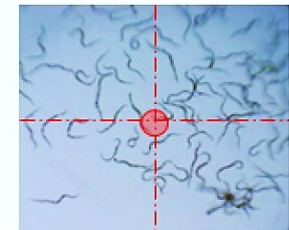


The device can perform High Throughput assays in liquid media in the following microplate formats:

- 6 wells [30-32 IR led/well]
- 24 wells [4 IR led/well]
- 96 wells flat bottom [2 IR led/well]
- 96 pocillos fondo U [1 IR led/well]
- 384 pocillos [1 IR led/well]

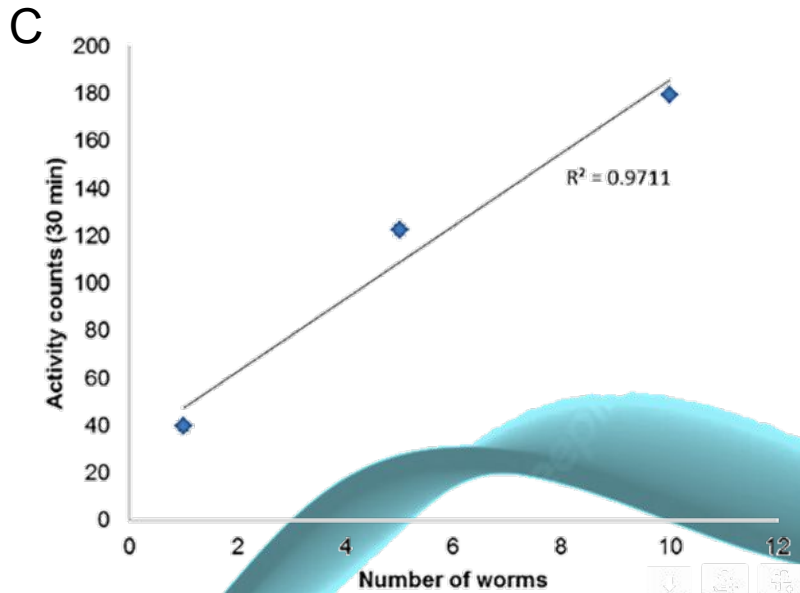
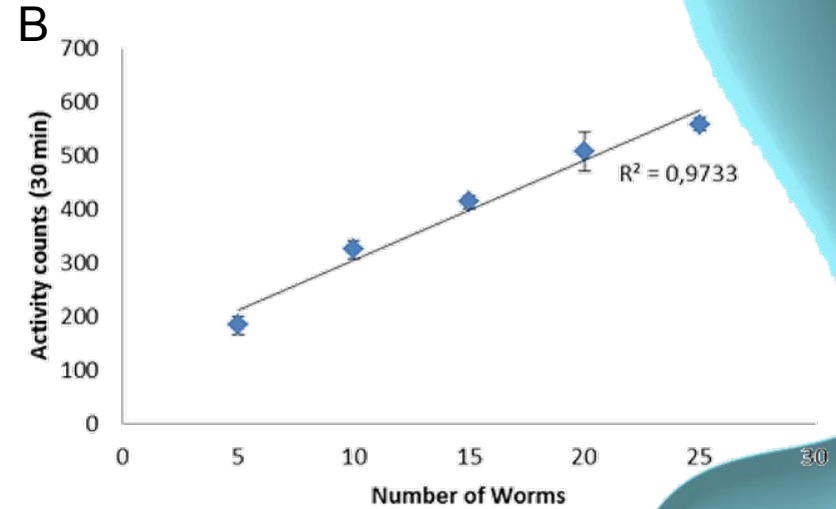
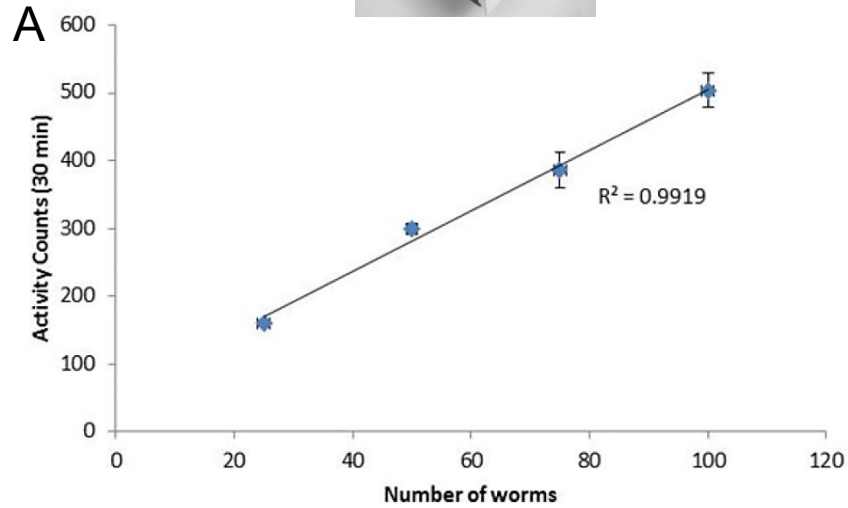


**Infrared locomotor tracking system  
(Worm Microtracker)**

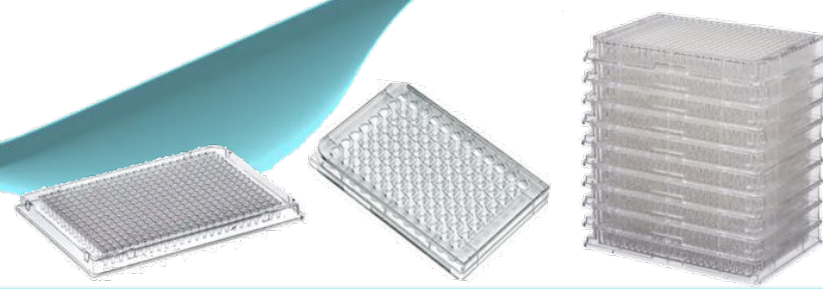




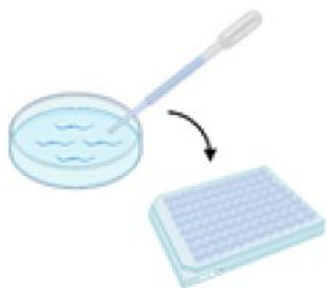
## Equipment detection range



- A. Curve in a 96-well flat-bottomed microplate. The system has a linear detection range between 25 and 100 young adult N2 worms.  $R^2=0.99$ .
- B. Curve in a 96-well U-bottomed microplate. The system has a linear detection range between 5 and 25 young adult N2 worms.  $R^2=0.97$ .
- C. Curve in a 384-well microplate. The system has a linear detection range between 1 and 10 young adult N2 worms.  $R^2=0.97$
- The bars represent +/- S.D.







(A) Transfer 20 young adults worms in 90  $\mu$ l to 96-well "U" bottom plates

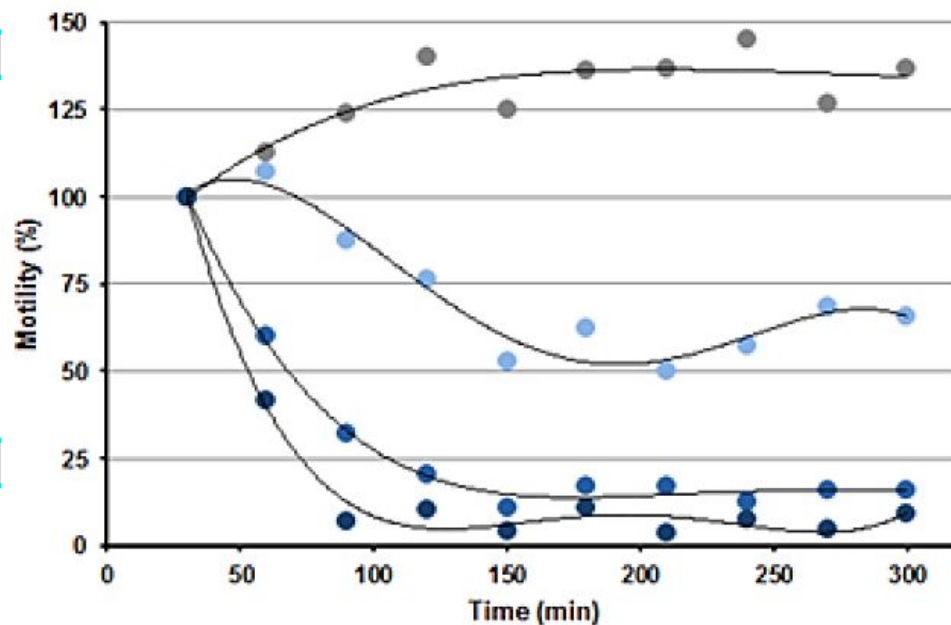


(B) Add 10  $\mu$ l of a 10X concentrated solution of chemicals



(C) Record the activity of the plate with worms using wMicroTracker ONE

### RESULTS

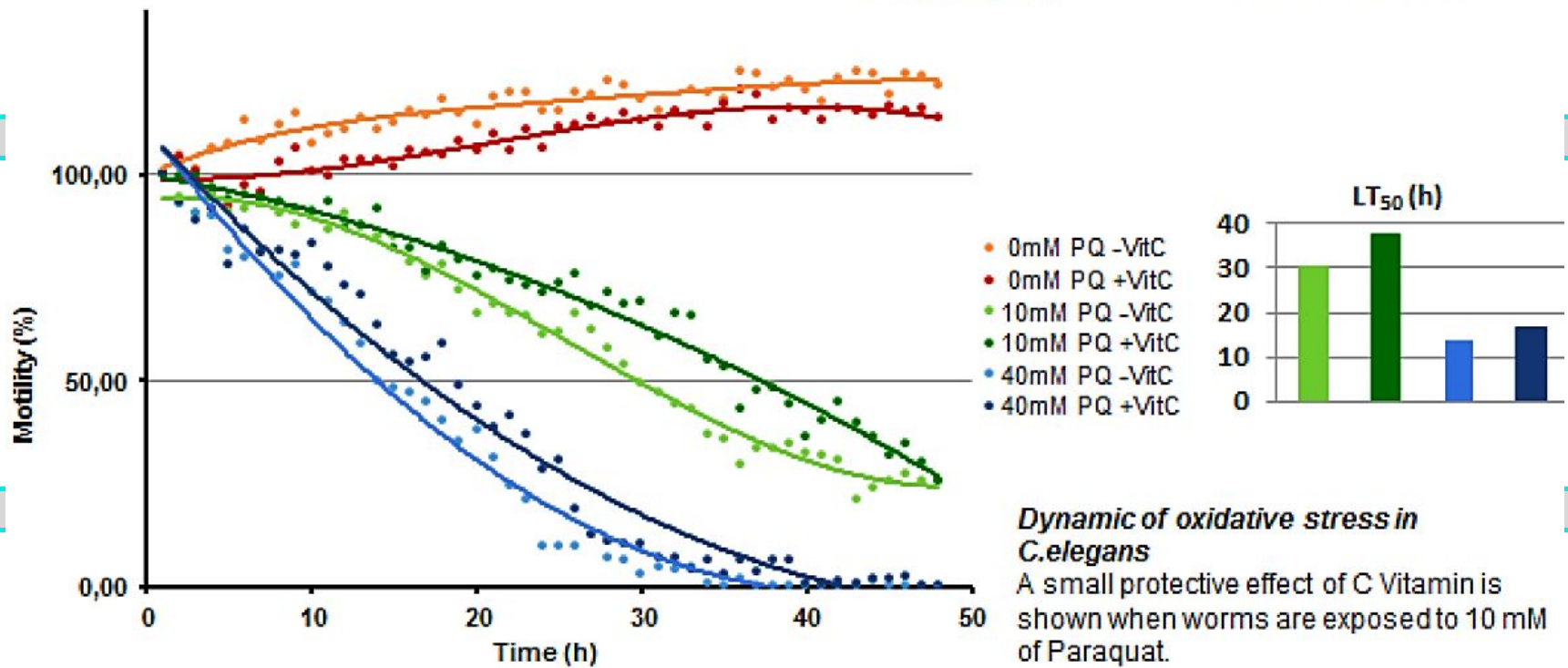
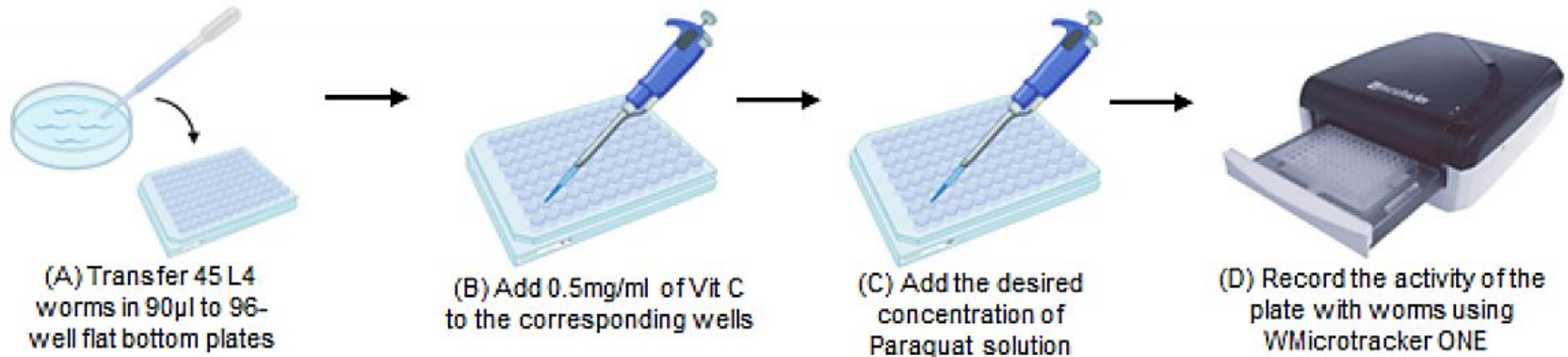


(D) Generate the data report using ONE software and plot

- Control
- Levamisol 5  $\mu$ M
- Levamisol 10  $\mu$ M
- Levamisol 100  $\mu$ M

### *Kinetic of paralysis of C.elegans using levamisole and in W96*

In these experiments we can observe the kinetic and dose response to Levamisole. In less than one hour a quantitative dose response effect is obtained.





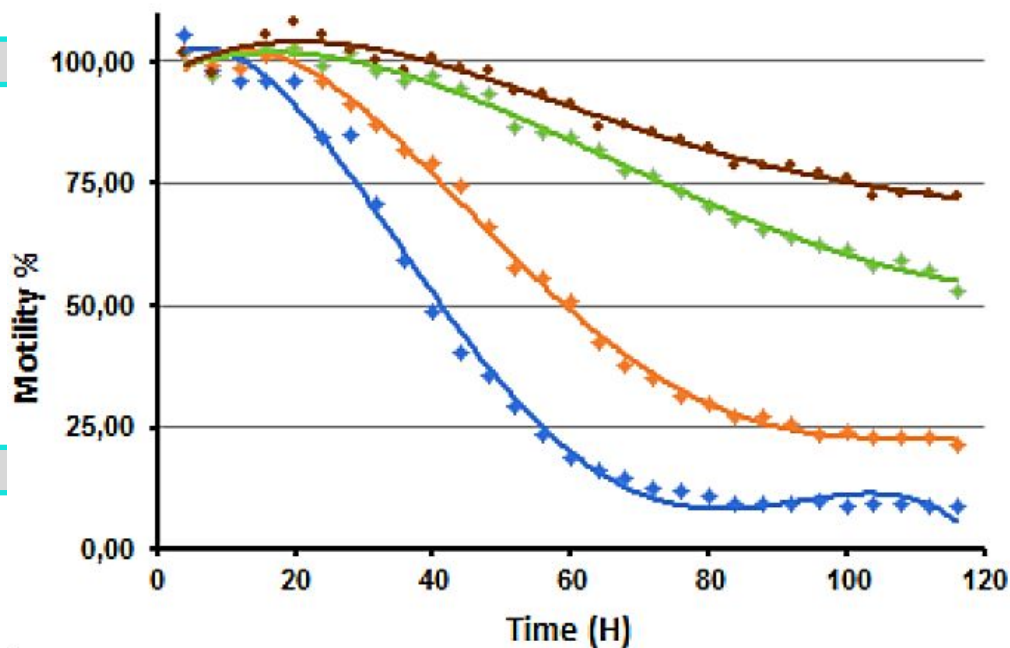
(A) Transfer 45 young adults worms in 90  $\mu$ l to 96-well flat bottom plates



(B) Add 10  $\mu$ l of a 10X concentrated solution of chemicals



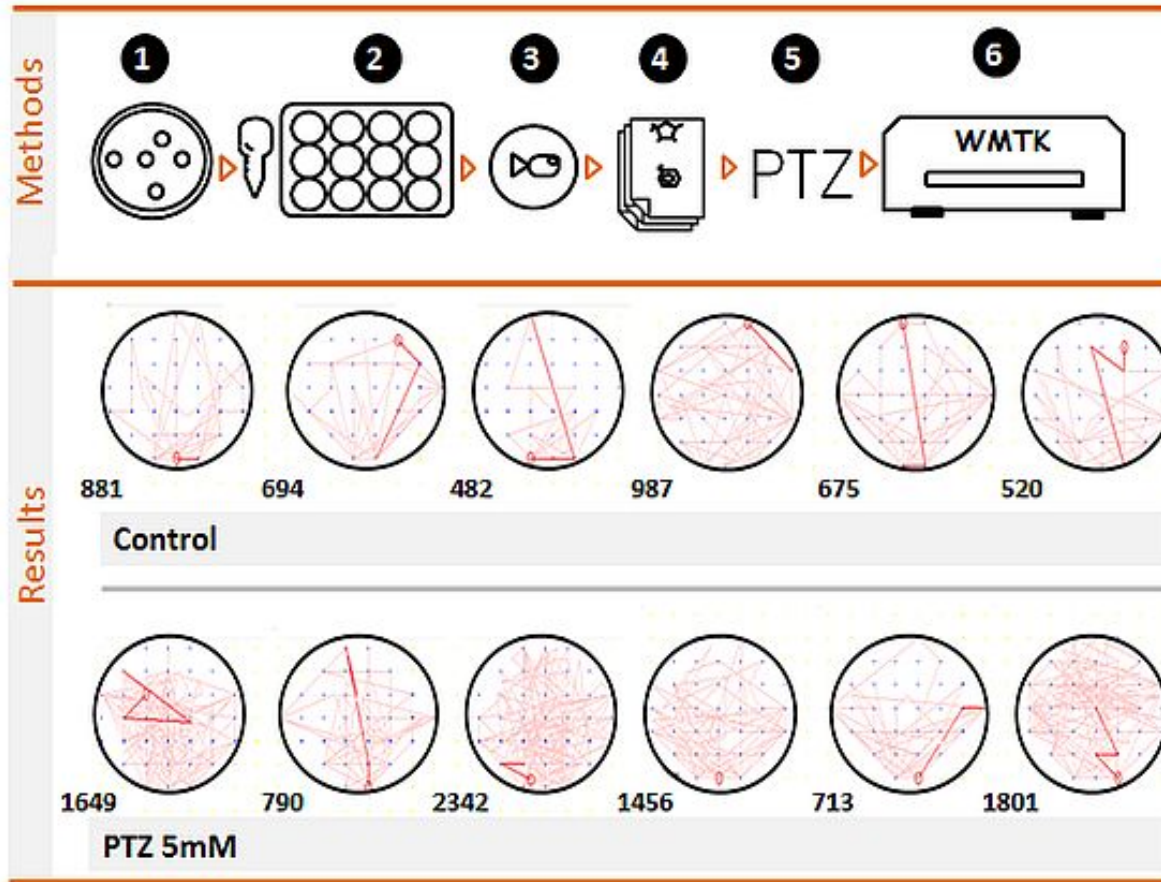
(C) Record the activity of the plate with worms using WMicrotracker ONE



- ◆ CHA0 (dil 1/2)
- ▲ CHA0 (dil 1/10)
- ▼ CHA0 (dil 1/100)
- Control

### *Kinetics of killing using bacterial supernatant of Pseudomonas Fluorescens CHA0*

In this experiment we can observe long-term kinetic and dose response effect using dilutions of bacterial supernatant of Pseudomonas CHA0. Paralytic killing is reported to depend on bacterial hydrogen cyanide production



### Measurement of the effect of PTZ on Zebrafish larvae as a pharmacological model of epilepsy.

Effect of PTZ on the behavior of 5-dpf (days post fertilization) zebrafish larvae, after a 15-minute exposure. The graph shows the tracking of swimming behavior and distance (in mm) for each fish cultured in a 6-well microplate. An increase in the total distance traveled by the fish in the presence of the convulsant agent is observed



# COMPONENTS INCLUDED



	Microplate reader system.		9V DC, 1.5Amp switching Power Source*
	USB-B cable.		Microplate format adapters: -384/24 wells -96 w. flat bottom -96 w. "U" shaped bottom.
			Acquisition Software: available from <a href="http://www.phylumtech.com">www.phylumtech.com</a>

## Measurements

22cm x 28cm x 9.1cm (8.7in x 11.03 in x 3.6 in)

## Requirements

- IBM PC compatible with the following minimum requirements :
  - o Pentium II processor or above (>1GHz clock).
  - o 512Mb of RAM memory.
  - o 1 USB port available.
  - o DVD-ROM unit (optional)
  - o Windows XP 32bits (or higher) operative system.
  - o At least 200Mb of free HD space.
  - o Automatic shutdown/sleep/hibernate mode must be disabled.