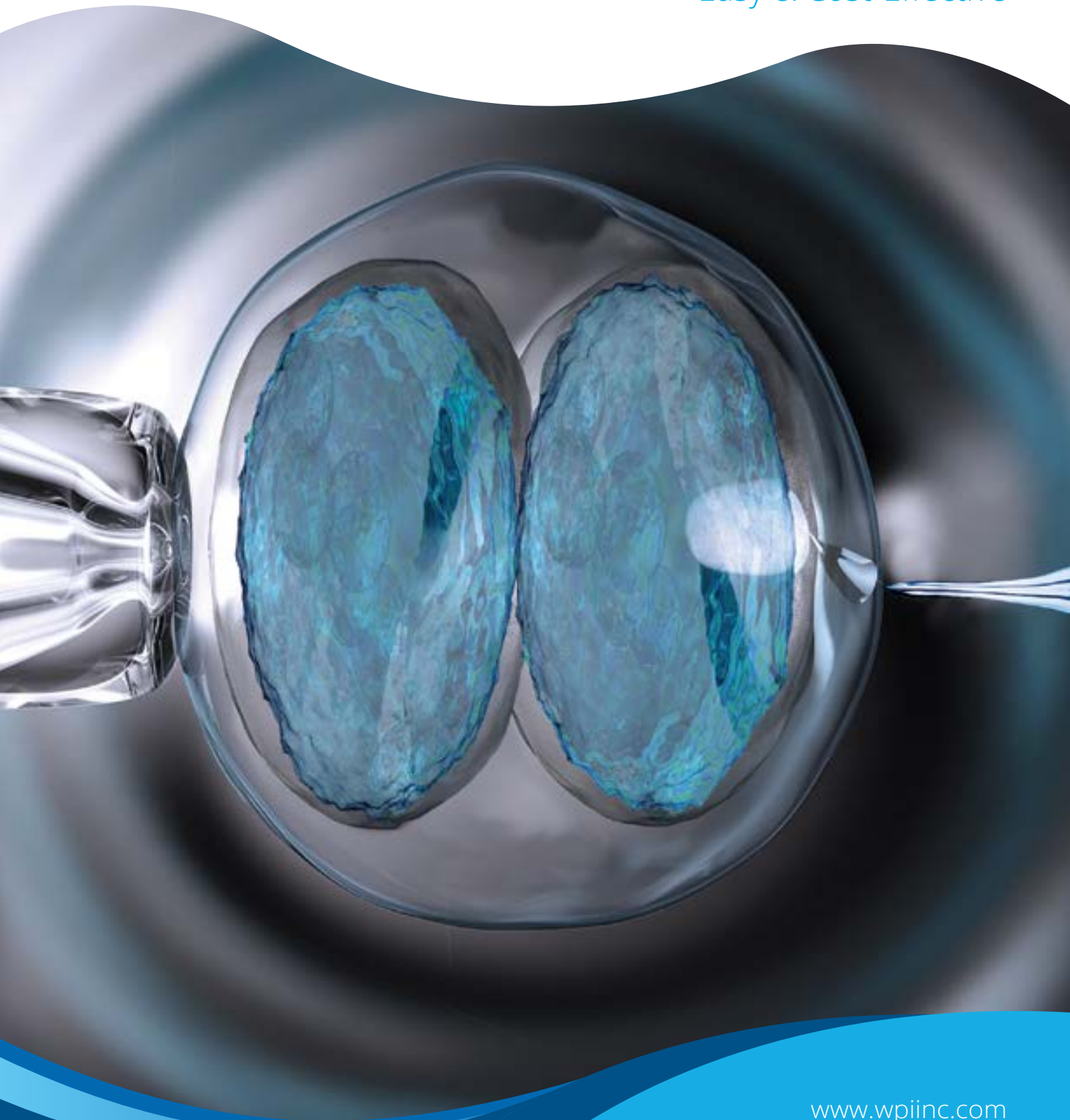




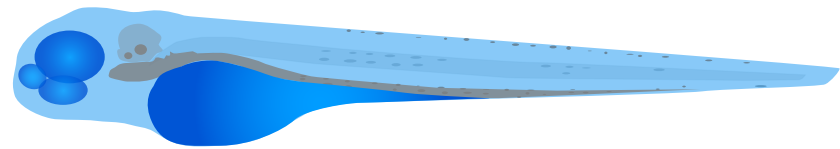
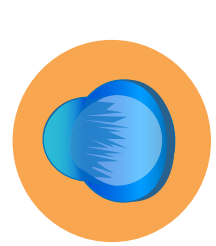
# ZEBRAFISH RESEARCH

Make your Zebrafish Research  
Easy & Cost-Effective



[www.wpiinc.com](http://www.wpiinc.com)

# Pinpoint Cell Penetrator for Targeted Microinjection



## RESEARCH AREAS



Developmental  
Biology



Genetics



Oncology



Toxicology



Pharmacology



Regenerative  
Medicine

### Enhanced microinjection efficiency for genetic modification



The full microinjection system presents components which optimize both visibility and application experience. Our new generation pressure microinjectors (**PV850**, **µPUMP**, and **Micro-ePUMP**) offer a streamlined solution for ultra-low volume delivery for cell transfection.

The **Smart-PZM** Trinocular Microscope comes with a High Definition camera and Monitor for improved visibility of your sample, along with analysis software for target quantification.

This bundle features a lighted base with an articulating mirror, ideal for manipulating contrast within your working field for crystal-clear live recording. Pair your injector with WPI's **Z-Molds** and pre-pulled tips, along with our micromanipulator (**M3301**) for the best experience.

### Detection of free radicals & other molecules for disease models



This is a typical laboratory setup of a WPI free radical analyzer with data acquisition system.

The WPI Free Radical Analyzer, **TBR4100**, enables real-time, highly sensitive detection of free radicals such as NO, H<sub>2</sub>O<sub>2</sub>, H<sub>2</sub>S, CO, O<sub>2</sub>—important physiological indicators in intracellular cell signaling and homeostasis. Free radicals beyond the level of normal detoxication can result in oxidative stress (OS). OS affects wound healing and aging, and it causes several diseases such as diabetes mellitus, neurodegenerative disorders (Parkinson's disease, Alzheimer's disease and Multiple sclerosis), cardiovascular diseases (atherosclerosis and hypertension), respiratory diseases (asthma), cataract development, rheumatoid arthritis and various cancers (colorectal, prostate, breast, lung, bladder cancers).



The output shows the raw data for an ISO-NOPF200 (NO sensor). Only one of the four channels is used in this application.

## REFERENCES

Angelisa Frasca<sup>1</sup>§, Federica Miramondi<sup>1</sup>§, Erica Butti<sup>2</sup>, Marzia Indrigo<sup>3</sup>, Maria Balbontin Arenas<sup>1</sup>, Francesca, M. Postogna<sup>1</sup>, Arianna Piffer<sup>1,5</sup>, Francesco Bedogni<sup>3,6</sup>, Lara Pizzamiglio<sup>1,7</sup>, Clara Cambria<sup>1</sup>, Ugo Borello<sup>4</sup>, Flavia Antonucci<sup>1</sup>, Gianvito Martino<sup>2</sup>, Nicoletta Landsberger<sup>1,3</sup>, Neural precursor cells rescue symptoms of Rett syndrome by activation of the interferon  $\gamma$  pathway. bioRxiv. 2024 Jan 08

Chad VanSant-Webb<sup>1,\*</sup>, Hayden K. Low<sup>2,\*</sup>, Junko Kuramoto<sup>1,3,\*</sup>, Claire E. Stanley<sup>2,\*</sup>, Hantao Qiang<sup>2</sup>, Audrey Su<sup>1</sup>, Alexis N. Ross<sup>1</sup>, Chad G. Cooper<sup>2</sup>, James E. Cox<sup>2</sup>, ScoO A. Summers<sup>1</sup>, Kimberley J. Evason<sup>1,5,\*\*</sup>, Gregory S. Ducker<sup>2,5</sup>. Phospholipid isotope tracing reveals  $\beta$ -catenin-driven suppression of phosphatidylcholine metabolism in hepatocellular carcinoma. bioRxiv. 2023 Oct 16

Esra Katkat<sup>1,2</sup>, Yeliz Demirci<sup>1,2†</sup>, Guillaume Heger<sup>3</sup>, Doga Karagulle<sup>1,4</sup>, Irene Papatheodorou<sup>5</sup>, Alvis Brazma<sup>5</sup> and Gunes Ozhan<sup>1,4,\*</sup>. Canonical Wnt and TGF- $\beta$ /BMP signaling enhance melanocyte regeneration but suppress invasiveness, migration, and proliferation of melanoma cells Canonical Wnt and TGF- $\beta$ /BMP signaling enhance melanocyte regeneration but suppress invasiveness, migration, and proliferation of melanoma cells. Frontiers. 2023 Nov 13

Heabin Kim<sup>1,†</sup>, Hyun-Taek Kim<sup>2,†</sup>, Seung-Hyun Jung<sup>1</sup>, Jong Won Han<sup>1</sup>, Seonmi Jo<sup>1</sup>, In-Gyu Kim<sup>3</sup>, Rae-Kwon Kim<sup>3,4</sup>, Yeon-Jee Kahm<sup>3,4</sup>, Tae-Ik Choi<sup>5</sup>, Cheol-Hee Kim<sup>5</sup> and Jei Ha Lee<sup>1,\*</sup>. A Novel Anticancer Peptide Derived from Bryopsis plumosa Regulates Proliferation and Invasion in Non-Small Cell Lung Cancer Cells. Marine Drugs. 2023 Nov 24.

Katerji M1, Filippova M1, Duerksen-Hughes P1. Approaches and Methods to Measure Oxidative Stress in Clinical Samples: Research Applications in the Cancer Field. Oxid Med Cell Longev. 2019 Mar 12;2019:1279250. doi: 10.1155/2019/1279250. eCollection 2019.

Alugogu Phaniendra, Dinesh Babu Jestadi, and Latha Periyasamy. Free Radicals: Properties, Sources, Targets, and Their Implication in Various Diseases. Indian J Clin Biochem. 2015 Jan; 30(1): 11–26.



## Zebrafish Microdissection Instrument Kits

### KIT 1

- **WPZ00018** Kit Includes:
- Probe, 0.25 mm Tips, 45° angle, 15 cm
- Probe, 0.25 mm Tips, 15 cm
- Student Vannas Scissors, 9 cm, Straight, 500 µm Tip
- Microdissecting Forceps, 10.2 cm, Angled, Serrated



\* Item also sold individually: WPI0218, WPI0118, 501777, 504479

### KIT 2

- **WPZ00218** Kit Includes:
- Probe, 0.25 mm Tips, 45° angle, 15 cm
- Probe, 0.25 mm tips, 15 cm
- Noyes Scissors, 12 cm, Straight, Sharp/Sharp, 15 mm Blades
- Tissue Forceps, 1x2 Teeth
- Iris Forceps, 10 cm, Curved, Serrated

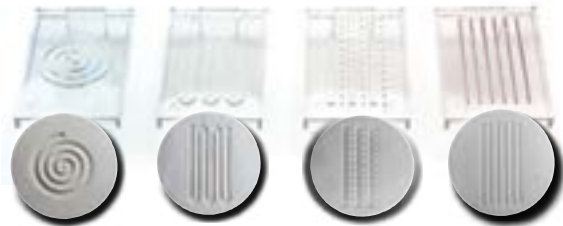


\* Item also sold individually: WPI0218, WPI0118, 500228, 15918, 15915

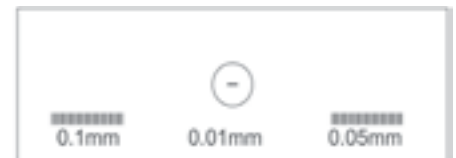
### OTHER ACCESSORIES



The WPI **M3301** Micromanipulators, Electrode Holders, Pre-Pulled Glass Micropipettes and **Z-MOLDS** were used in this application.



**Z-MOLDS** Microinjection & Transplantation Molds (4 per kit, shown above) are used to imprint reservoirs into agarose gel. Easily pipette and isolate embryos into the grooves for simplified injection.



**Glass-Slide Micrometers (504606)** are placed below your petri dish for injection sample-to-target measurement.



The pre-pulled glass pipettes (**UTips**) save the cost and time of making your own micropipettes.



**NANOLITER200** offers a simple alternative to embryonic transfection using positive displacement.



WPI offers biosensing macrosensors (2 mm) like this one and a range of microsensors for NO, O<sub>2</sub>, H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub>S.



**U.S. PATENT  
5,294,325**

WPI's **MicroFil™** fills micropipettes easily and reliably by starting close to the pipette tip, eliminating air bubble formation.