

# Zebrafish p-Chip Implantation Protocol

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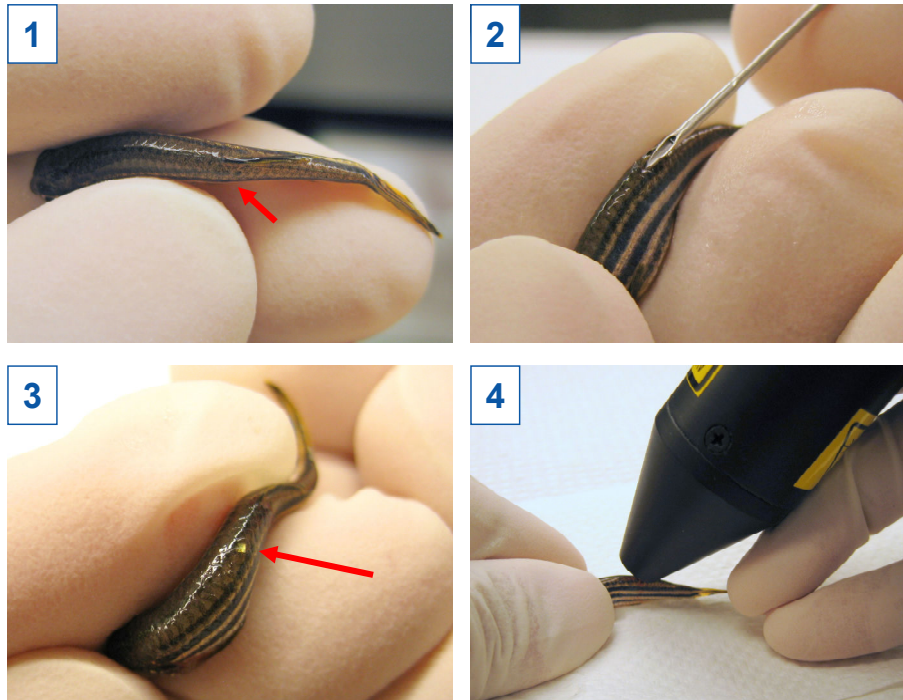
## Adult Zebrafish p-Chip<sup>®</sup> Implantation Protocol

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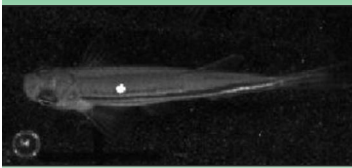
The p-Chip should be inserted into the same location in each zebrafish to facilitate subsequent reading. We recommend inserting the p-Chip into the dorsal muscle on the left side of the back, as shown in **Figure 1**. There are fewer melanocytes on the sides of the back making it easier to visualize/scan the p-Chip afterwards. This protocol has been conducted on juvenile and adult zebrafish with a body length of 20 mm or greater. Tagged zebrafish have been followed over a 4 month period with a 96% success rate without a noticeable impact on behavior.

### Figures 1-4.

Location, implantation and reading of p-Chips in adult zebrafish.



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# Zebrafish p-Chip Implantation Protocol

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## Preparation of Adult Zebrafish for p-Chip<sup>®</sup> Implantation

We recommend sedating the zebrafish in aquarium water with 0.4mg/ml (w/v) Tricaine. Wait until the fish has completely stopped moving before picking it up with a plastic spoon. Hold the fish between your index and middle fingers with the head facing toward you. Use your thumb, index, and middle fingers to position the fish, exposing the left middle dorsal area, as shown in **Figure 2**, to implant the p-Chip.

## Implanting p-Chips<sup>®</sup>

Hold the injector flat and parallel to the body axis of the fish. Insert the injector needle bevel side up at a slightly tilted angle, adjacent to the front base of the dorsal fin (**Figure 2**). Once the entire bevel is inserted into the muscle layer, 3-5 mm from the entry point, deliver the p-Chip by pushing the plunger steadily. You will feel a release of resistance once the needle has correctly penetrated into the muscle layer\*. Slowly withdraw the injector and return the fish to its tank for recovery. If properly implanted, the p-Chip should be readily visible (**Figure 3**), which will notably shorten subsequent read times as the laser can be precisely guided to the correct location.

\*Some internal bleeding might be sighted. It usually disappears after a week of rest.

## Reading IDs of p-Chips<sup>®</sup>

To read the p-Chip ID, sedate the zebrafish in fish water with 0.4 mg/ml (w/v) Tricaine. Wait until the fish completely stops moving. Pick the fish up with a plastic spoon and position it to expose the region where the p-Chip was inserted. Once the p-Chip is visually identified, scan the p-Chip under the laser in close proximity without touching the wand (**Figure 4**). The laser intensity will flicker as the p-Chip is being read and an audible beep will be heard. Return the fish to its tank for recovery.

\*Once the fish is sedated, the reading process usually takes less than 10 seconds per fish.



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