



Application Note ♦ Zebrafish

Zebrafish are a common and useful model organism for studies of vertebrate development and gene function. They may supplement higher vertebrate models, such as rats and mice.

They are useful in many areas of research such as developmental biology, oncology, toxicology, reproductive studies, genetics, neurobiology, environmental sciences, stem cell and regenerative medicine and evolutionary theory.

The rapid development of their embryos, progressing from eggs to larvae in less than three days, make them a better model for developmental studies than the traditional mouse or rat model.

Zebrafish are a common model for molecular biology studies such as real-time PCR and microarrays.

Materials:

- 100 % EtOH
- Kimwipes
- MMI Membrane Slides (PN: 50102, 50103)
- Glass slides

Method:

- Cut the fin off the Zebrafish
- Lay the fin on the flat side of the MMI Membrane Slide
- Remove as much water as possible from slide using Kimwipe or similar
- Let air dry for at least 10 minutes or until fin is firmly stuck to slide
- Place one drop of 100 % EtOH on the tail to dry the fin and prevent it from sticking to glass support slide
- Place glass slide under MMI Membrane Slide, load into instrument as normal
- Locate pigment cells and isolate them

Note: Pigment cells must be on the thin part of the fin, and not on the bone. Pigment cells on the bones are difficult to cut.

- Cut pigment cells of interest with cap down
- Lift cap to ensure that cells of interest are captured and stuck to cap

Note: It may be difficult to lift cells that are directly adjacent to bone of fin. Try to select cells that are in the middle of the fin and not near bones.

- Pipette in lysis buffer and extract cells as recommended by extraction kit manufacturer.

