Videos relating to Fluorescent Function-Spacer-Lipid construct labeling allows for real-time *in vivo* imaging of cell migration and behaviour in zebrafish (*Danio rerio*)

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**Video 1:** 2 hours post injection imaging of the caudal vein plexus area of 52 hpf recipient zebrafish receiving 0.2 mg/ml FSL-FLRO4-I transformed WKM cells. In the video, a large slow-moving cell tumbles along the endothelial surface. Elongated oval shaped erythrocytes move at a fast speed.

**Video 2:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window one focused on the eye region.

**Video 3:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window two focused on the heart region.

**Video 4:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window three focused on the first half the yolk extension region.

**Video 5:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window four focused on the caudal half of the yolk extension and the anal regions.

**Video 6:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window five focused on the caudal haematopoietic tissue region.

**Video 7:** Embryos (50-52hpf) were injected with 0.125 mg/ml FSL-FLRO4-II-treated cells. Window six focused on the tail region.

**Video 8:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 2 hours post injection for the sham-injected fish.

**Video 9:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 2 hours post injection for the fish transplanted with FSL-FLRO4-II treated cells.

**Video 10:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 19 hours post injection for the sham-injected fish.
**Video 11:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 19 hours post injection for the fish transplanted with FSL-FLRO4-II treated cells.

**Video 12:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 43 hours post injection for the sham-injected fish.

**Video 13:** Temporal assessment of FSL-FLRO4-II labeled cells in the lower trunk area. The image was taken 43 hours post injection for the fish transplanted with FSL-FLRO4-II treated cells.