

Supplementary Materials: Size Effects of Microplastics on Embryos and Observation of Toxicity Kinetics in Larvae of Grass Carp (*Ctenopharyngodon idella*)

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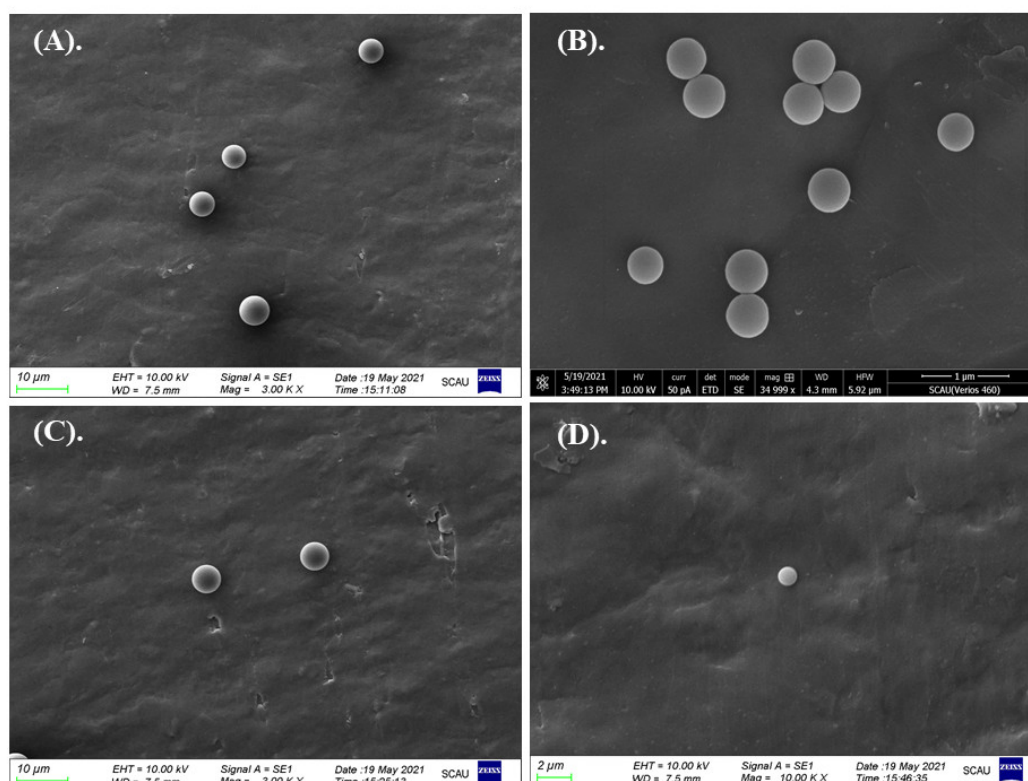


Figure S1. SEM figures of all kinds of polystyrene microspheres: 5 µm green fluorescent microplastics (A); 0.5 µm green fluorescent microplastics (B); 5 µm red fluorescent microplastics (C); 1 µm orange fluorescent microplastics (D).

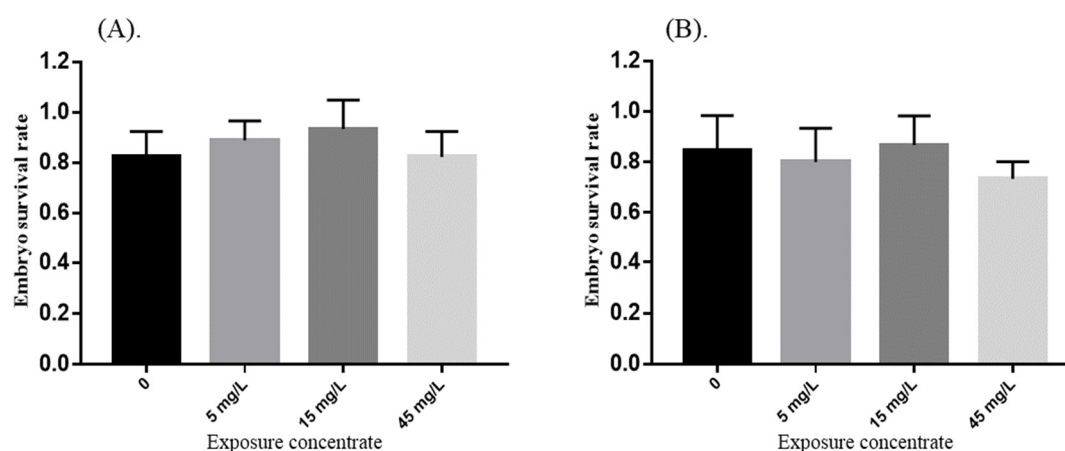


Figure S2. The survival rates of grass carp embryos among all groups when exposure to 8 µm (A) and 80 nm (B) microspheres.

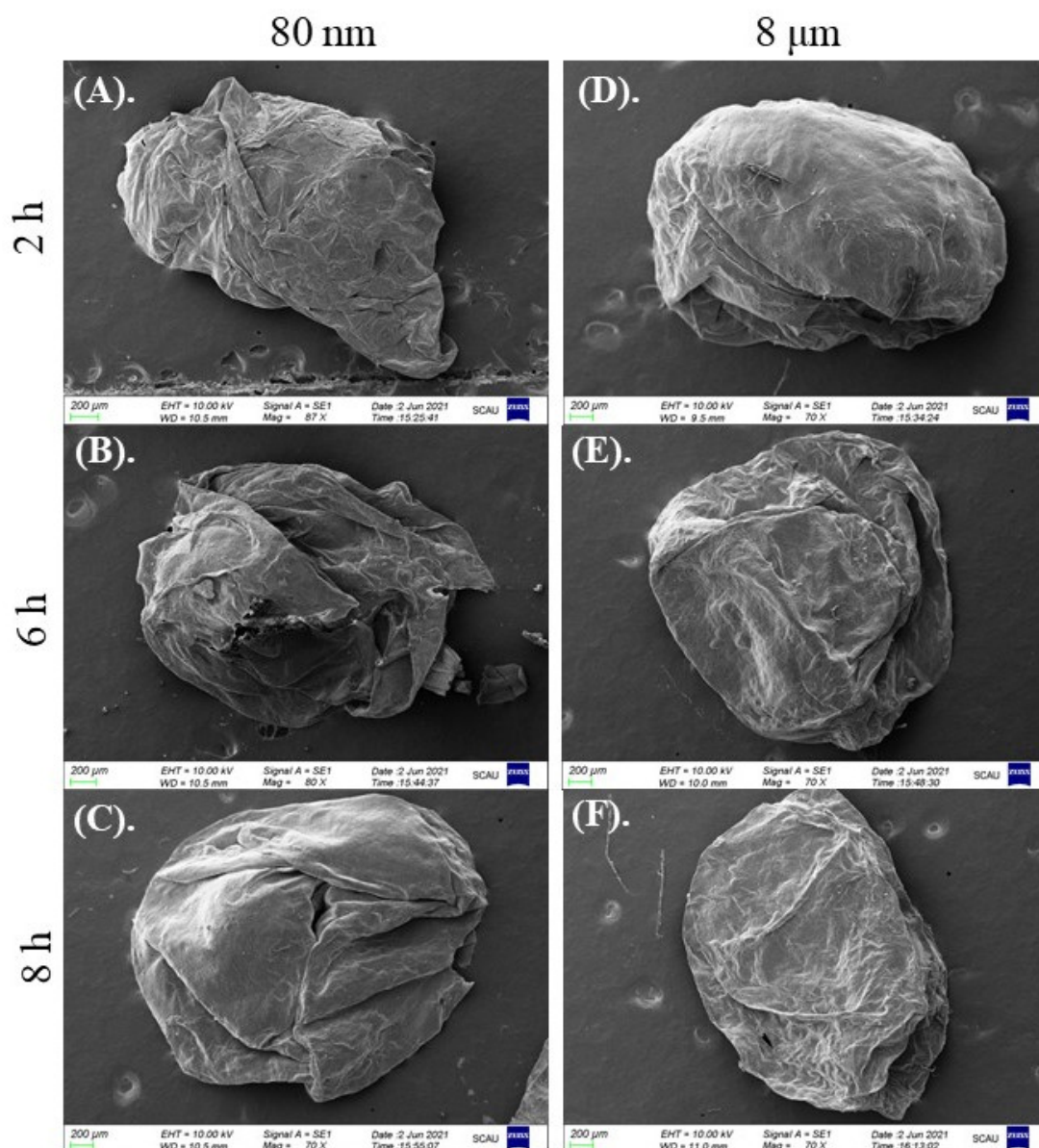


Figure S3. Chorion membranes of grass carp after drying. The size of microplastics and exposure time are shown in the figure.

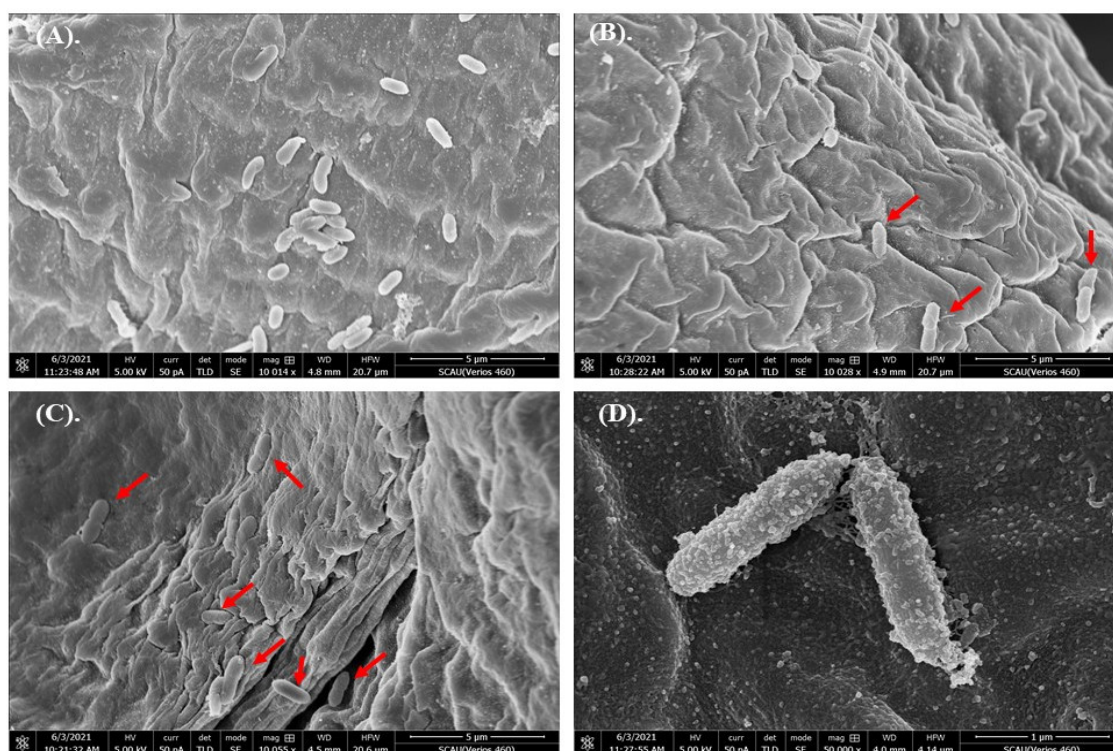


Figure S4. Rod-shaped bacteria were attached to some of the membrane surface. A-D show different forms of bacteria.

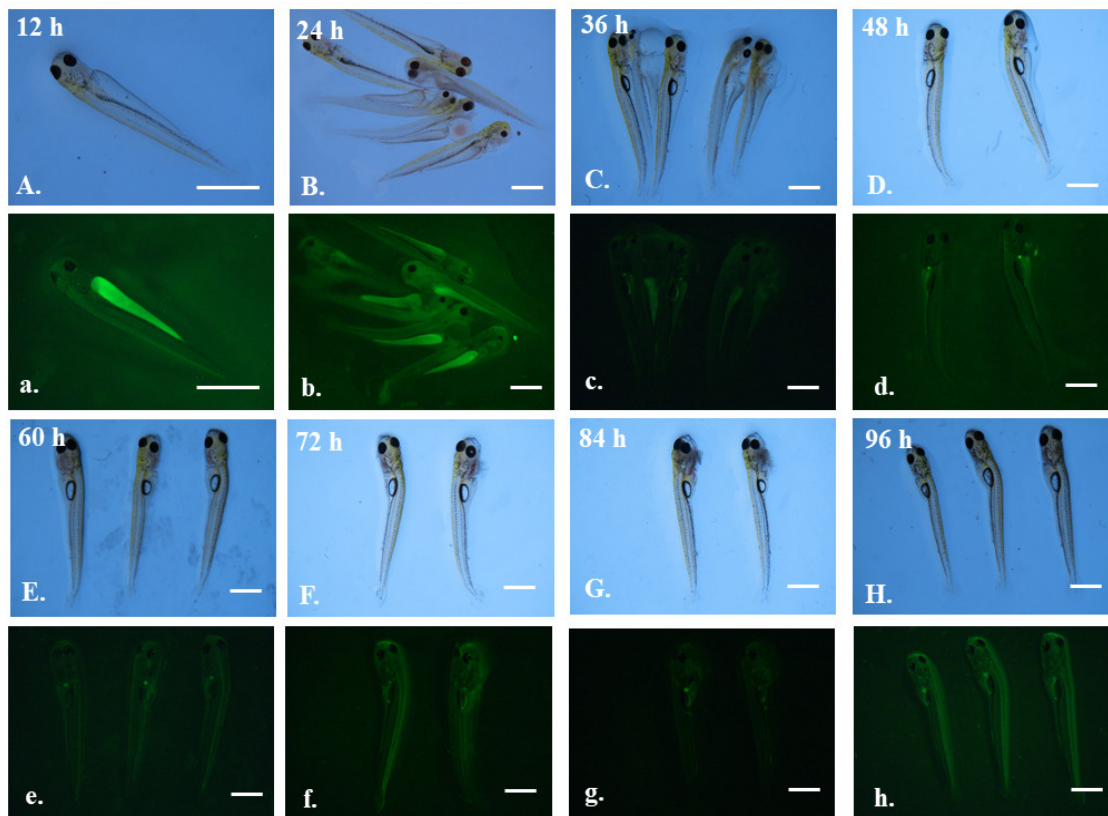


Figure S5. The control group in brightfield microscope (capital letters A–H) and green fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

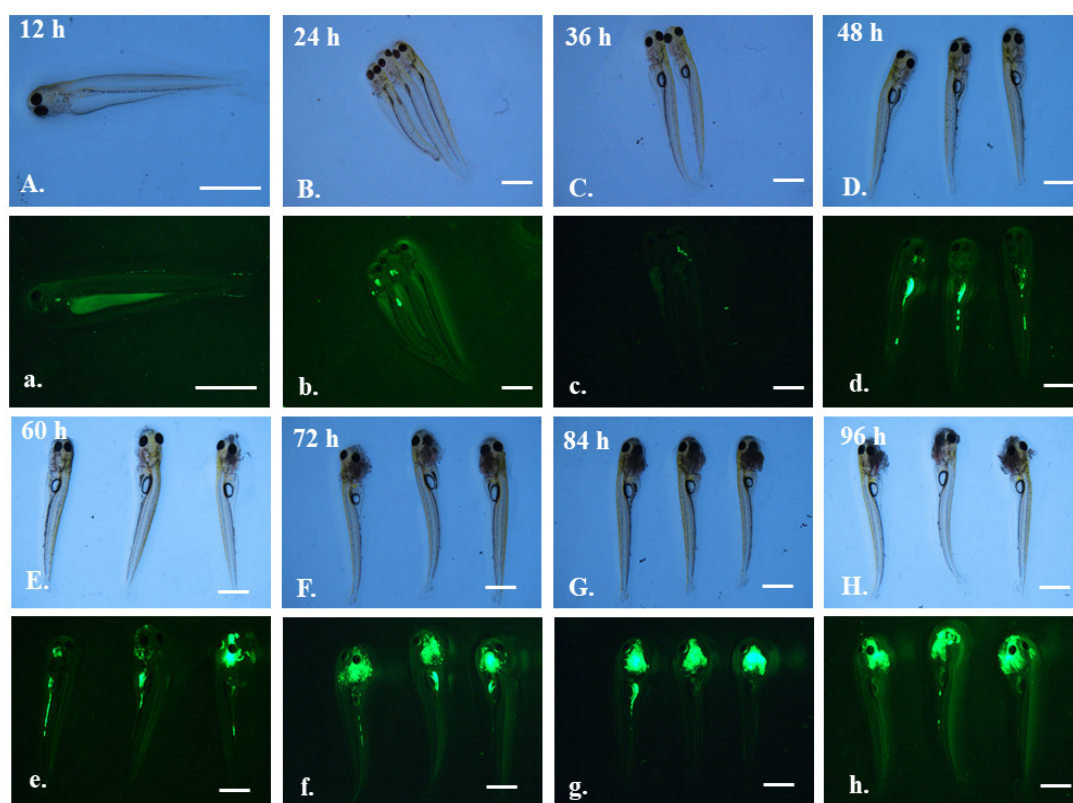


Figure S6. The larvae of grass carp after exposure to 0.5 µm green fluorescent microplastics. Photographs were taken under a brightfield microscope (capital letters A–H) and green fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

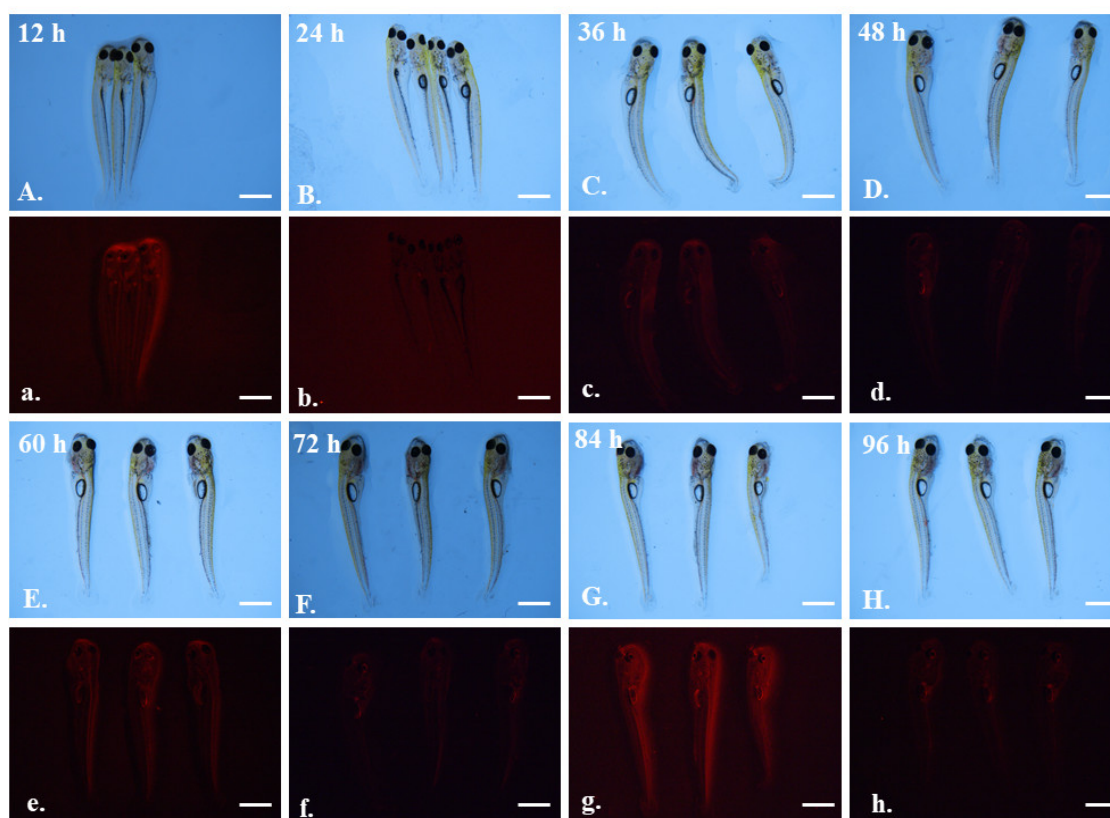


Figure S7. The control group in brightfield microscope (capital letters A–H) and red fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

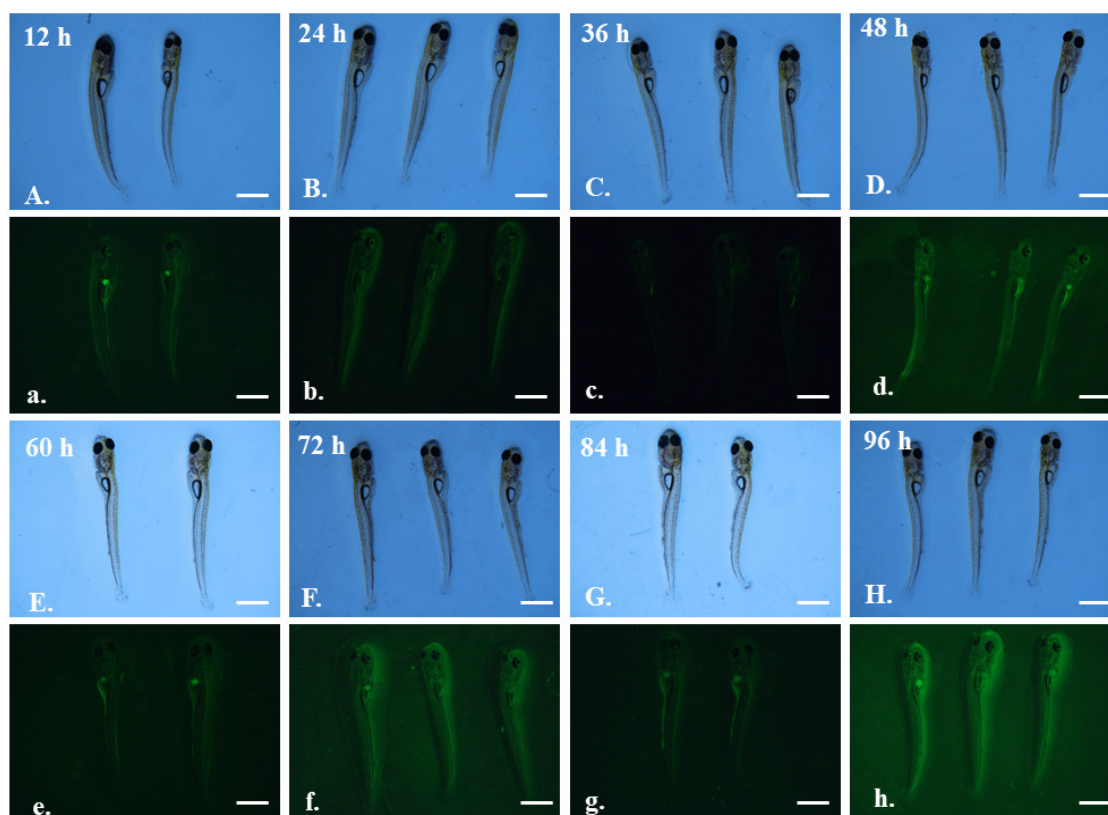


Figure S8. The control group during elimination test in brightfield microscope (capital letters A–H) and green fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

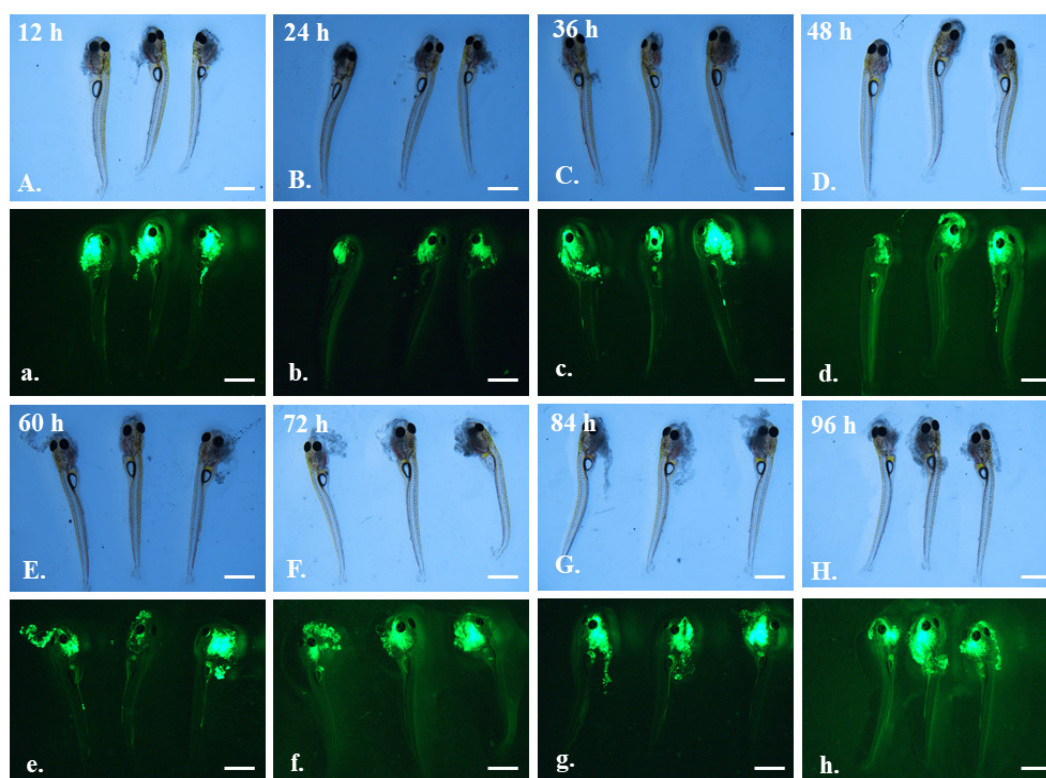


Figure S9. The larvae of grass carp after depurating from 5 μm green fluorescent microplastics. Photographs were taken under a brightfield microscope (capital letters A–H) and green fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

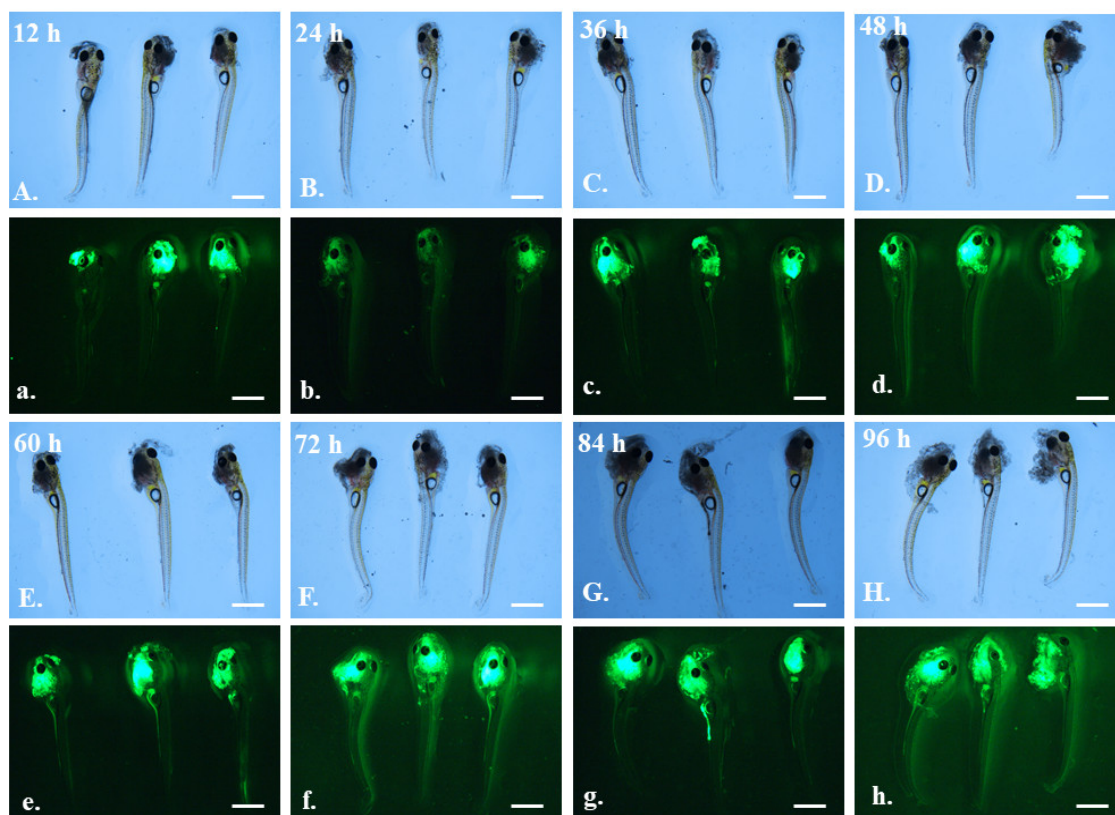


Figure S10. The larvae of grass carp after depurating from 0.5 μm green fluorescent microplastics. Photographs were taken under a brightfield microscope (capital letters A–H) and green fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

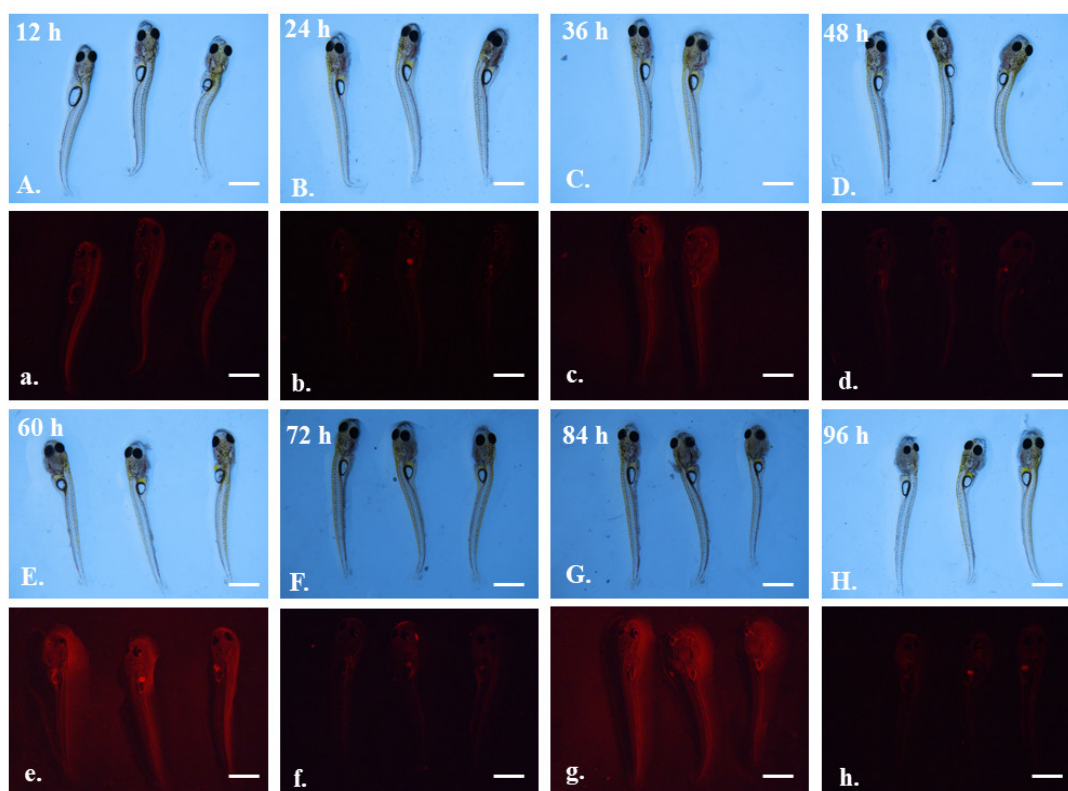


Figure S11. The control group during elimination test in brightfield microscope (capital letters A–H) and red fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

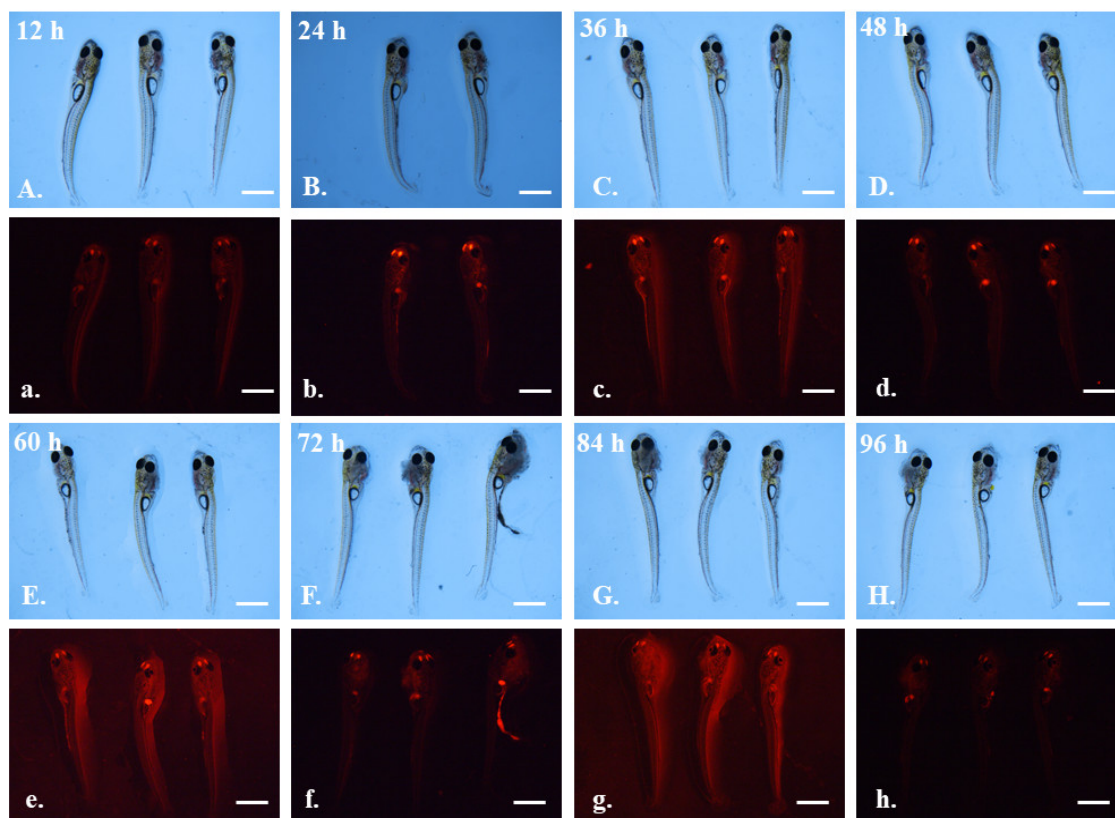


Figure S12. The larvae of grass carp after depurating from 1 µm red fluorescent microplastics. Photographs were taken under a brightfield microscope (capital letters A–H) and red fluorescent microscope (lowercase letters a–h). Observation time was labeled in the figure. Scale bar = 2 mm.

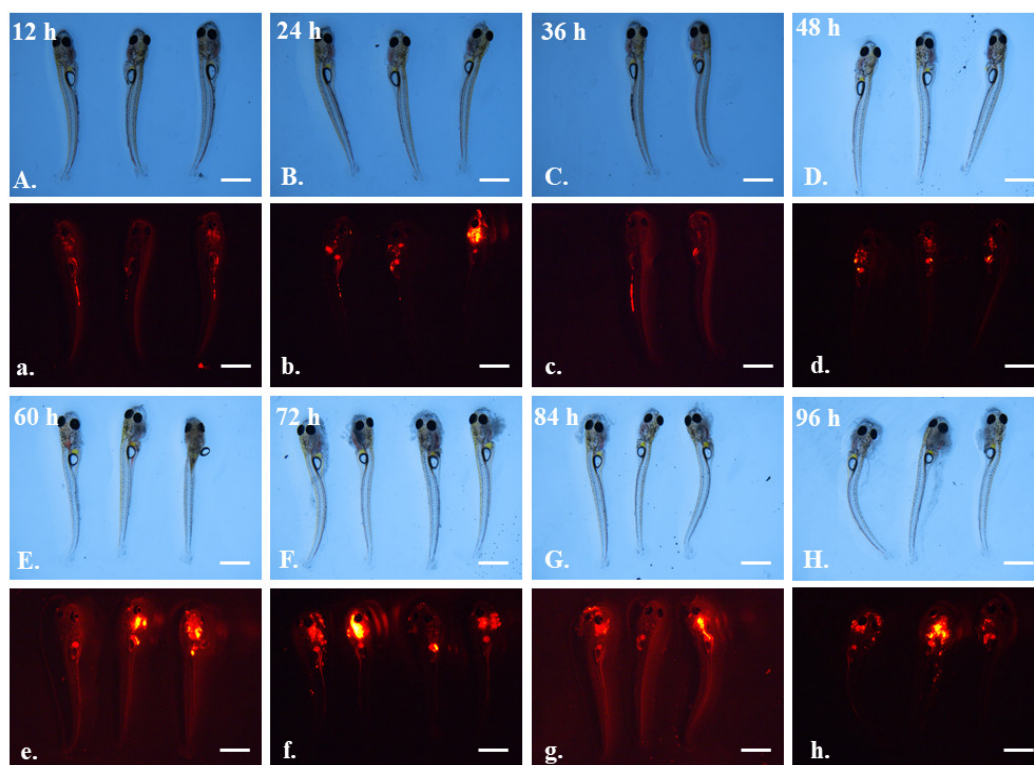


Figure S13. The larvae of grass carp after depurating from 5 μ m red fluorescent microplastics. Photographs were taken under a brightfield microscope (capital letters **A–H**) and red fluorescent microscope (lowercase letters **a–h**). Observation time was labeled in the figure. Scale bar = 2 mm.



Figure S14. The appearance of adult grass carp. The area marked in the red box is the nasal cavity.