

Insights into the *in vivo* toxicity of polytetrafluoroethylene micro- and nanoplastics

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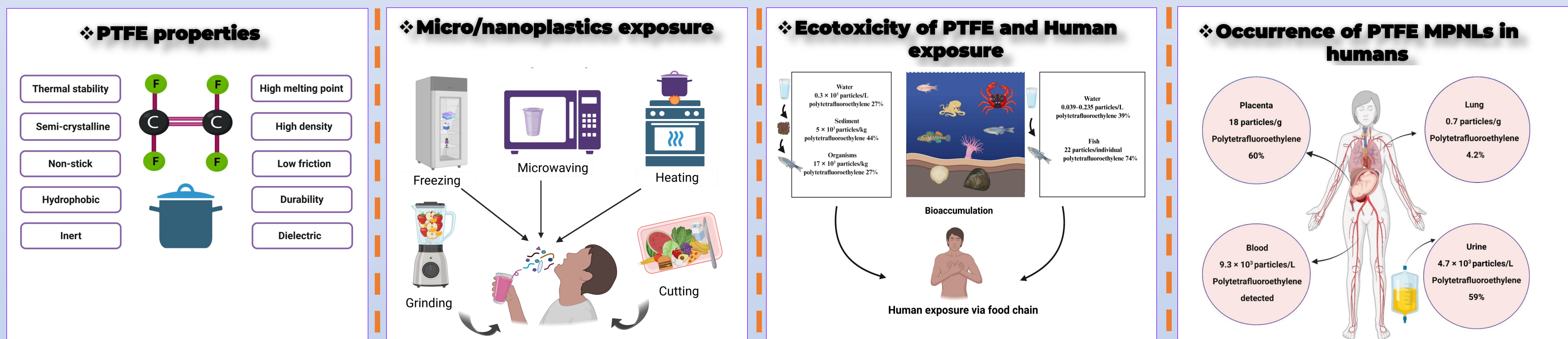
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Objectives

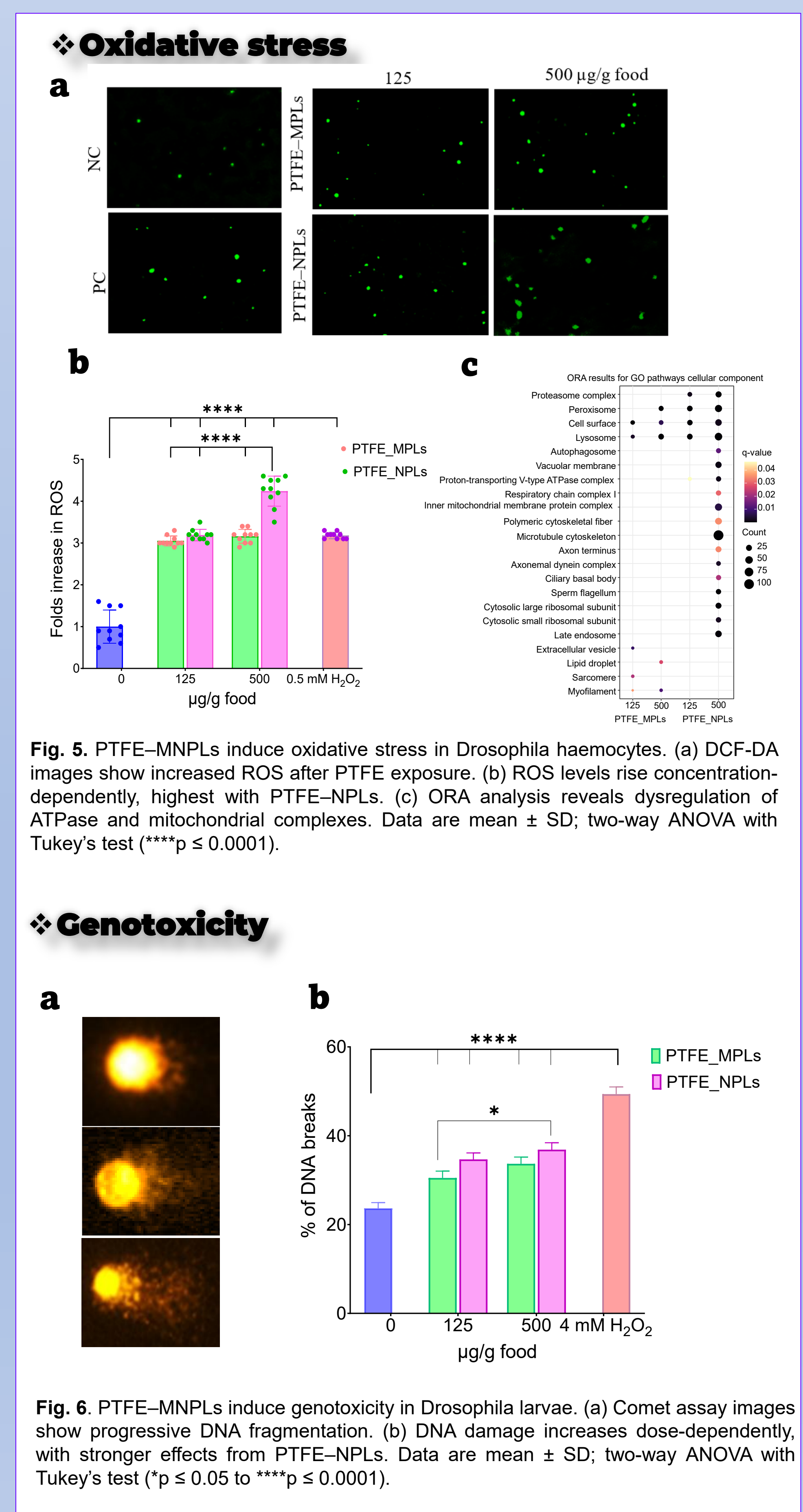
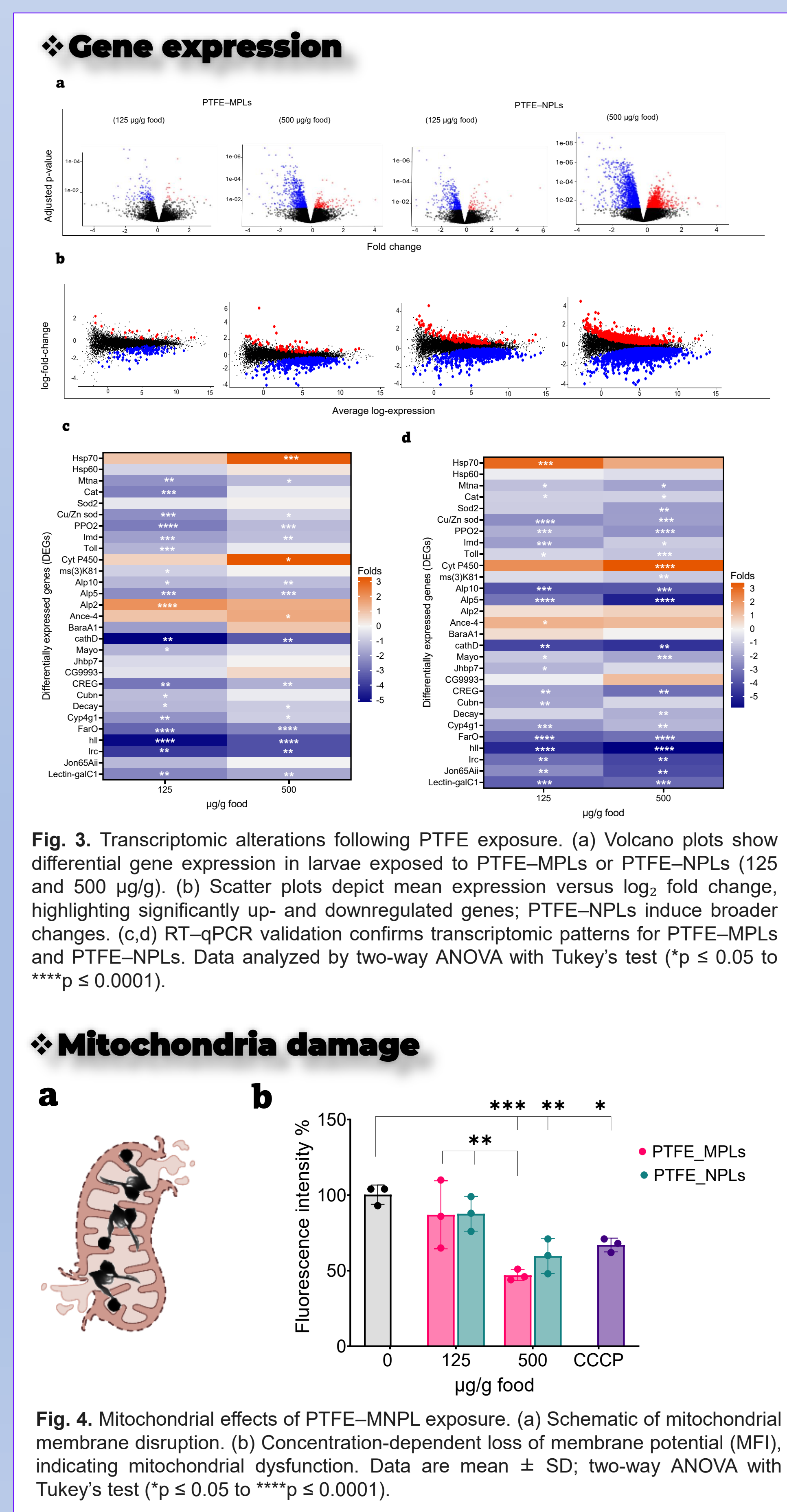
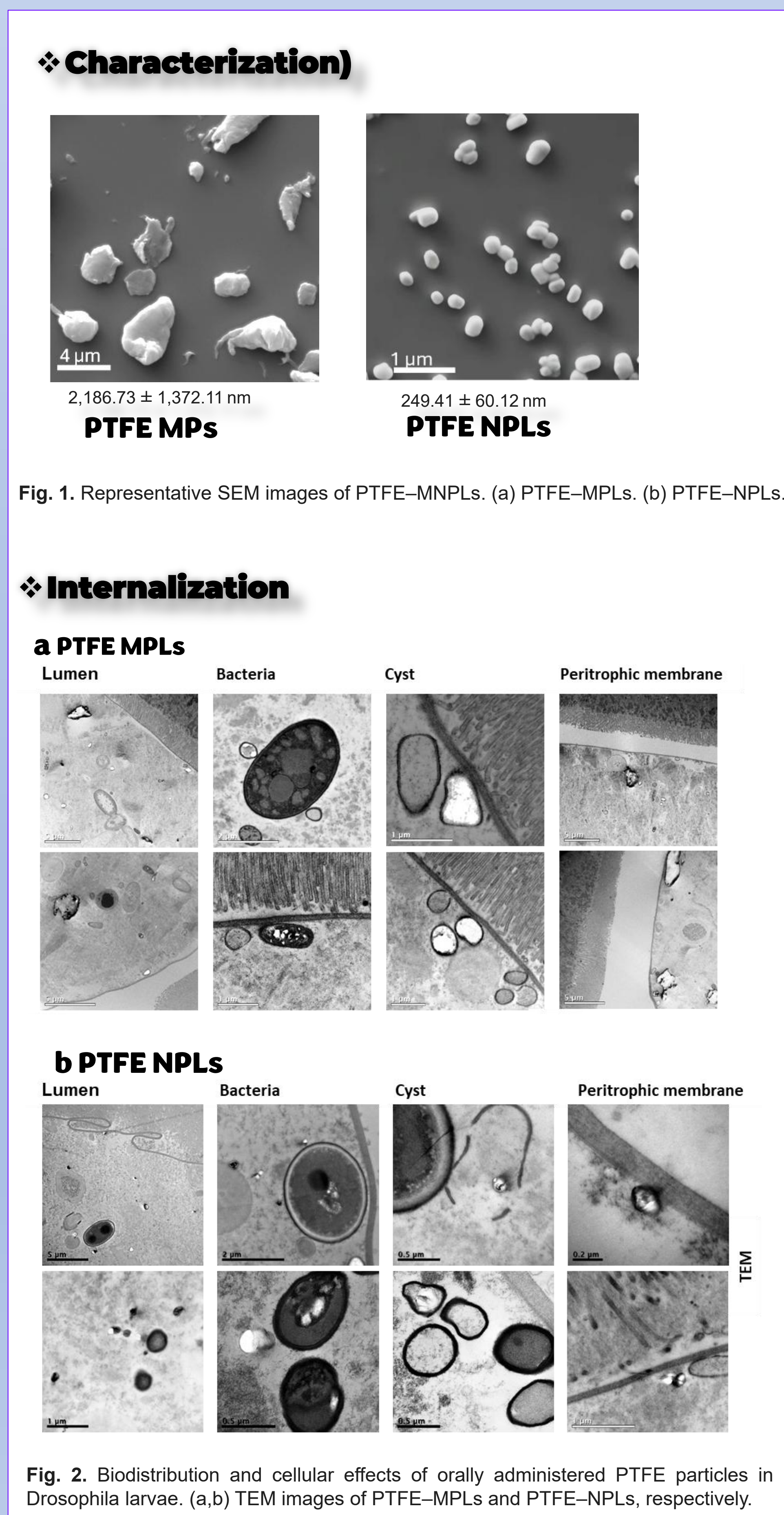
- To characterize main properties of polytetrafluoroethylene (PTFE) micro- and nanoplastics (MNPLs).
- To assess the biodistribution and cellular uptake of orally administered PTFE particles in *Drosophila* larvae.

- To investigate transcriptomic changes and validate key gene expression responses following PTFE exposure.
- To evaluate PTFE-induced oxidative stress, mitochondrial dysfunction, and genotoxicity in larval haemocytes.

Introduction



Results



1. PTFE-MNPLs are internalised and interact with microbiota.
3. PTFE-MNPLs cross the gut barrier and are widely distributed.
5. Inducing broad transcriptomic changes of various pathways

2. Midgut conditions promote particle fragmentation into secondary NPL.
4. Particles cause widespread structural and functional damage.
6. Oxidative stress and genotoxicity induced by PTFE MNPL exposure.