

Cite this as: Xufeng FU, Hang HAN, Hong YANG, Bo XU, Wenjie DAI, Ling LIU, Tiantian HE, Xing DU, Xiuying PEI. Nrf2-mediated ferroptosis of spermatogenic cells involved in male reproductive toxicity induced by polystyrene nanoplastics in mice[J]. Journal of Zhejiang University Science B, 2024, 25(4): 307-323.

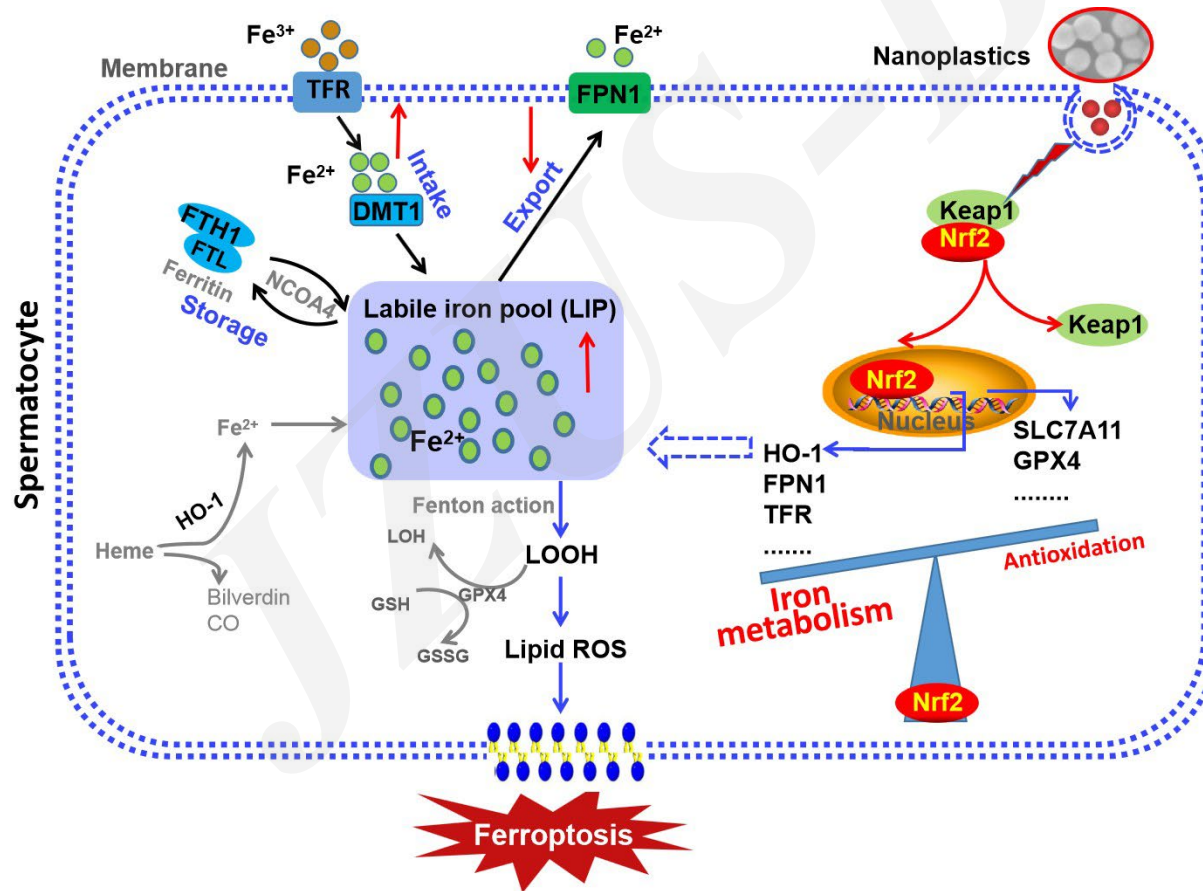
<http://doi.org/10.1631/jzus.B2300138>

Nrf2-mediated ferroptosis of spermatogenic cells involved in male reproductive toxicity induced by polystyrene nanoplastics in mice

Key words: Polystyrene nano plastics (PS-NPs); Reproductive toxicity; Ferroptosis; Nuclear factor erythroid 2-related factor 2 (Nrf2)

Research Summary

This study demonstrated that PS-NPs induce male reproductive dysfunction in mice by causing spermatogenic cell ferroptosis dependent on Nrf2.



Nrf2-mediated PS-NPs-induced ferroptosis-related mechanisms in spermatocytes

Innovation points

This paper mainly focused on the PS-NPs cause male reproductive toxicity in mice and trigger Nrf2-mediated ferroptosis of spermatogenic cells and summarized as following aspects:

- Polystyrene nanoparticles (PS-NPs) could cause male reproductive toxicity in mice and damage spermatogenic cells.**
- PS-NPs damaged spermatogenic cells through triggering ferroptosis.**
- Nrf2 plays a critical role in PS-NPs-induced ferroptosis of spermatogenic cells.**