

# Emerging nanomedicine strategies for Hepatocellular carcinoma therapy

Chen Guo<sup>1,2</sup>, Jiayu Zhang<sup>2</sup>,....., Hanqing Chen<sup>1,3</sup>, Jun Chen<sup>2</sup>

<sup>1</sup>South China University of Technology, Guangzhou, China

<sup>2</sup> Institute of High Energy Physics, Chinese Academy of Sciences (CAS), Beijing, China

<sup>3</sup>Capital Medical University, Beijing, China



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# Introduction

## Nanomedicine strategies for hepatocellular carcinoma therapy

### Formulations



Lipid nanoparticles (LNPs)

Polymer-based nanoparticles

Inorganic nanoparticles (INPs)

Nanoparticles based on natural substances

### Liver-specific targeting strategy



Active targeting

Passive targeting

### Stimulus-responsive strategies

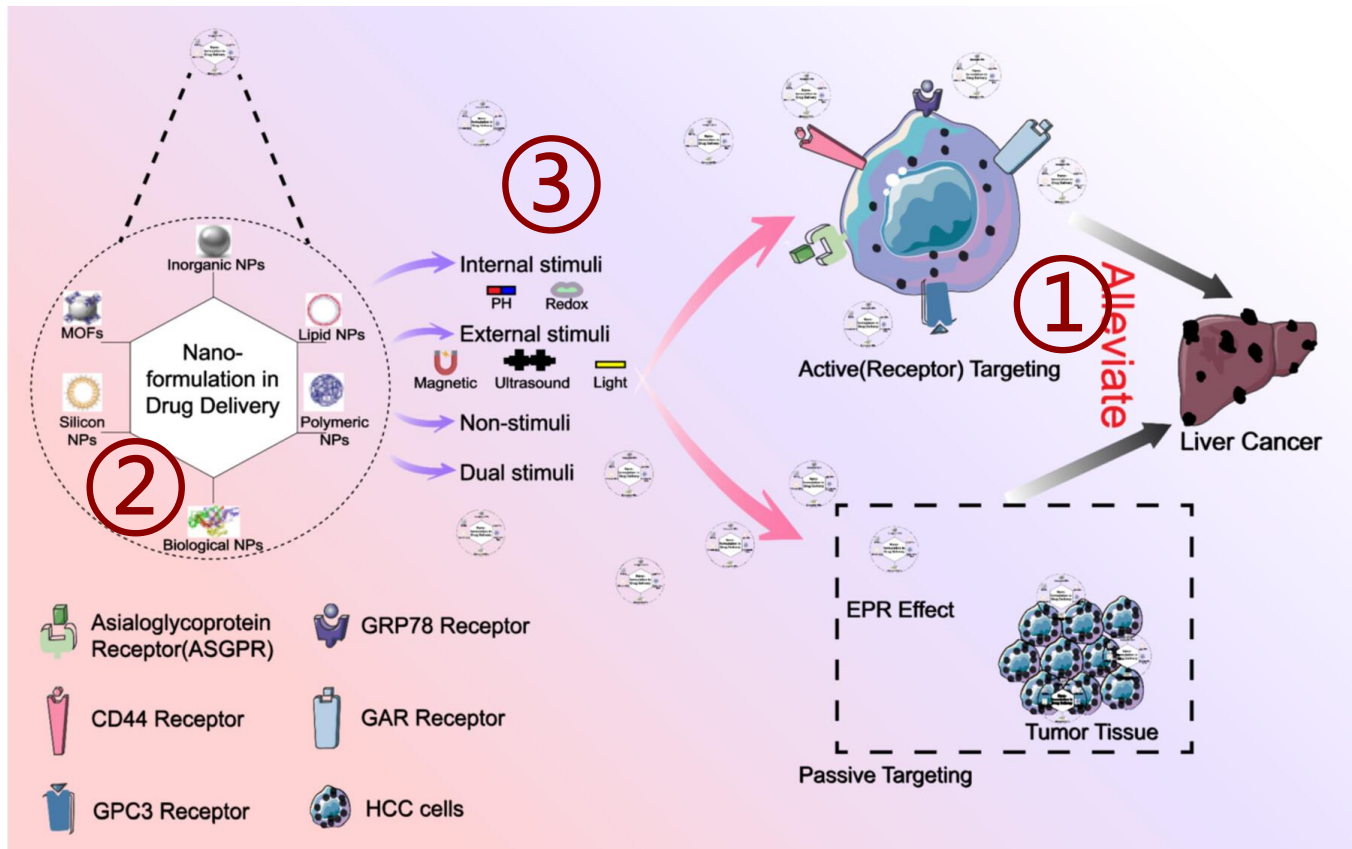


Responsive nanomaterials for internal stimuli

Responsive nanomaterials for external stimuli

Responsive nanomaterials for dual internal and external stimuli

# Highlights



①

The comprehensive review centers on the application of nanoparticle drug delivery systems in the management of liver tumors.

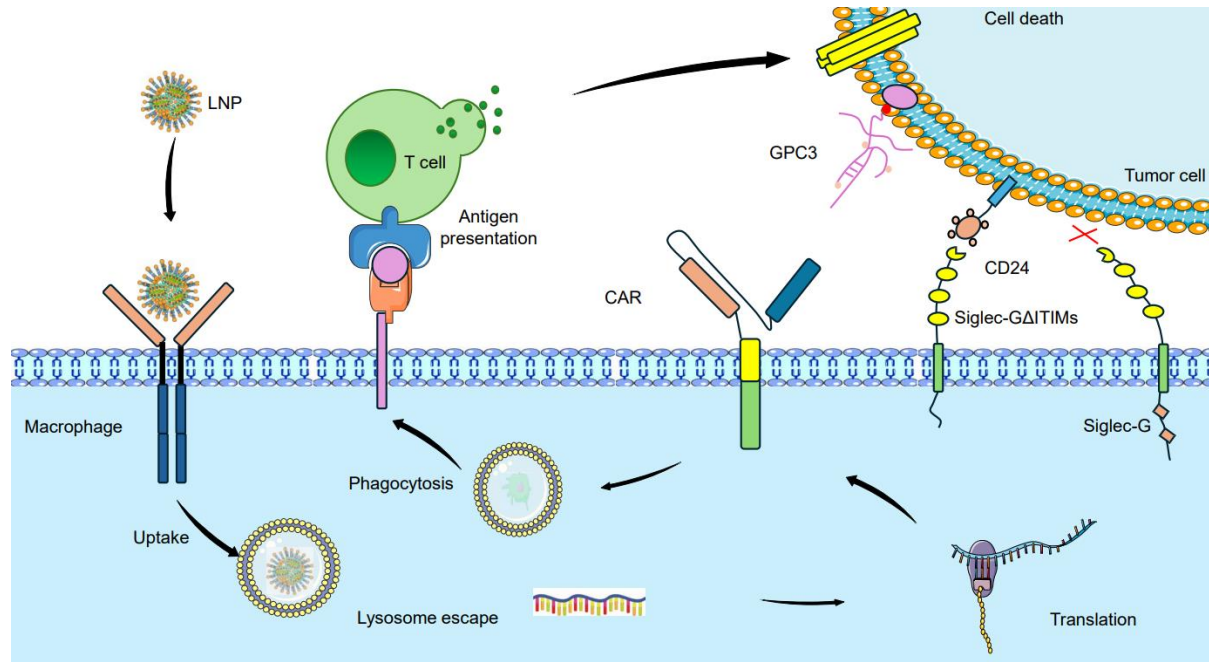
②

It emphasizes the formulation of these drug delivery systems and targeted strategies specific to liver tumors.

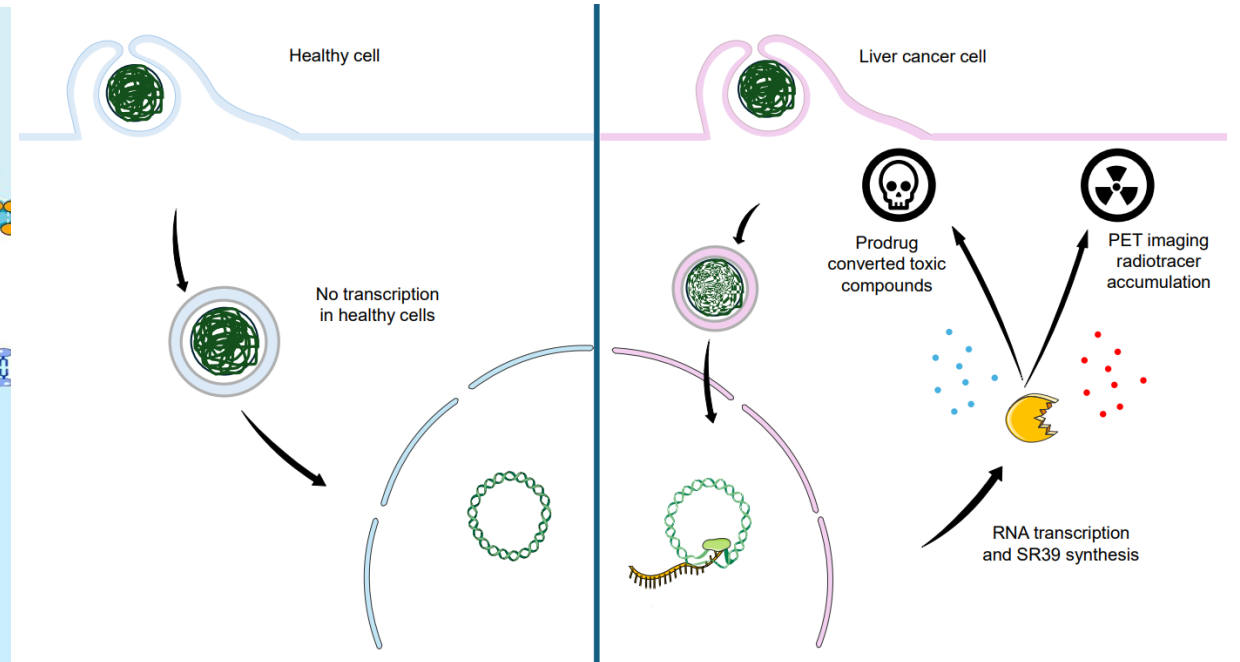
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The review also explores various methods of drug release, aiming to provide valuable insights into the potential of nanoparticle drug delivery systems for liver tumor treatment.

# Formulations

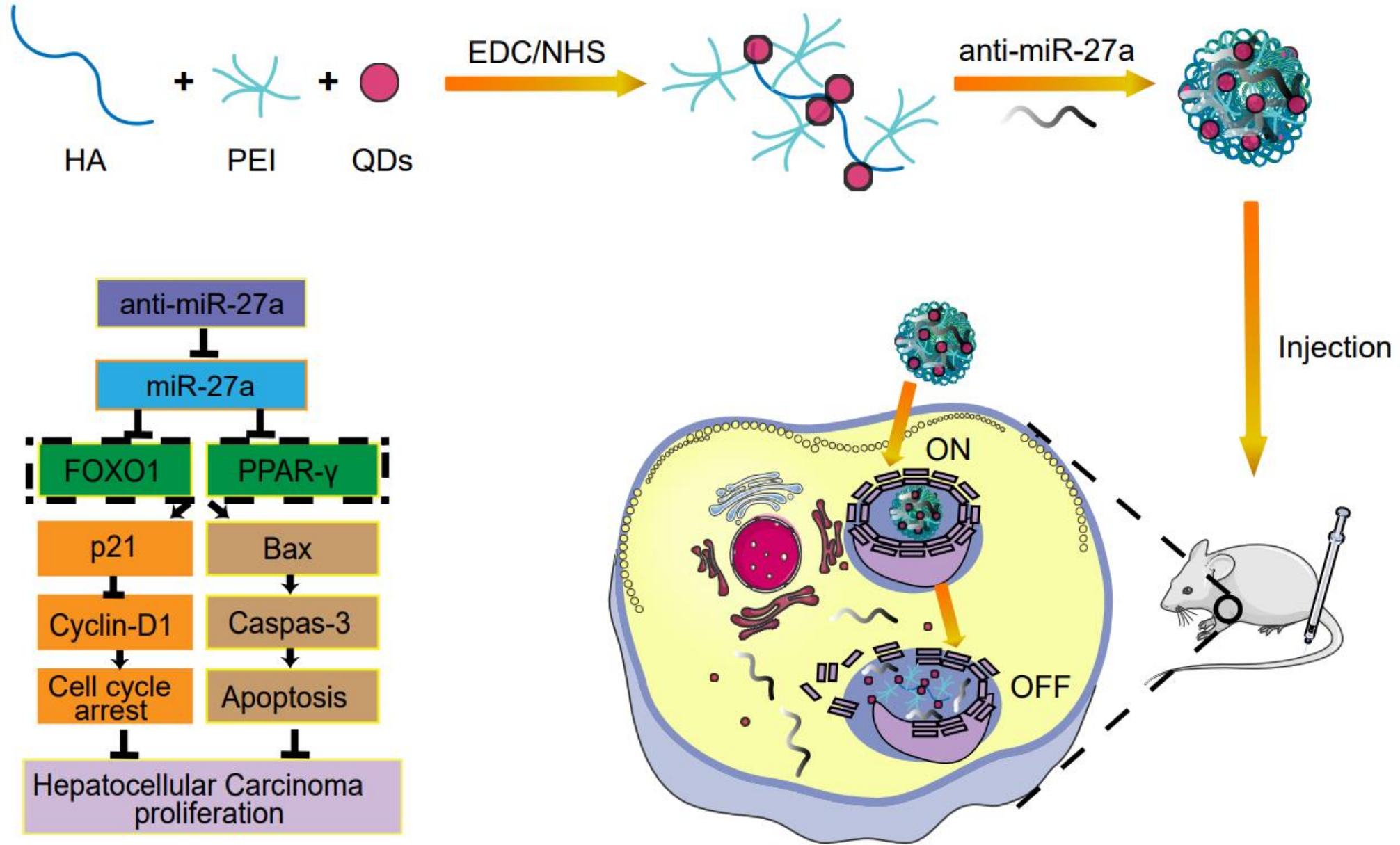


Lipid Nanoparticles (LNPs)



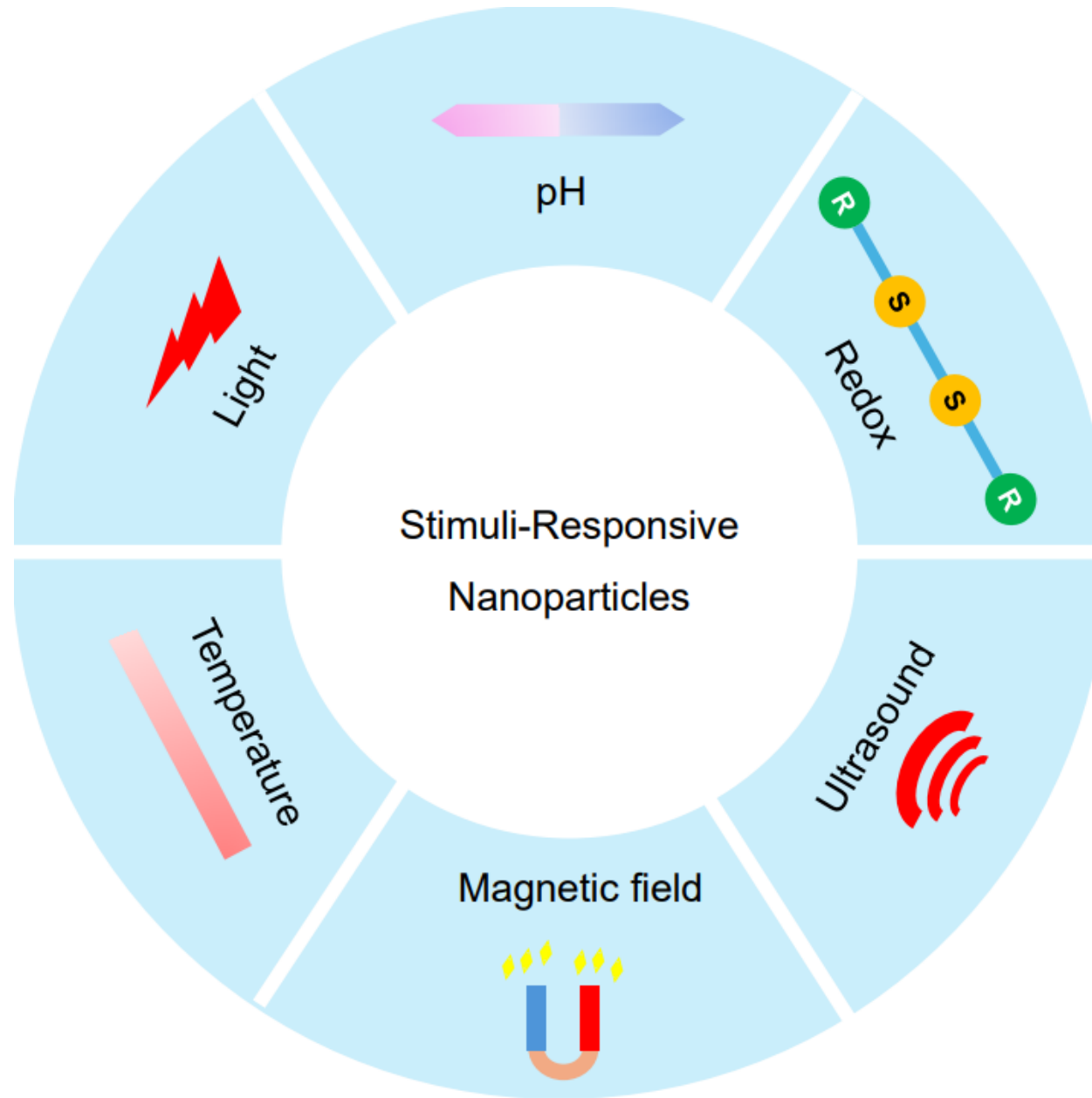
Polymer-based nanoparticles

# Liver-specific targeting strategy



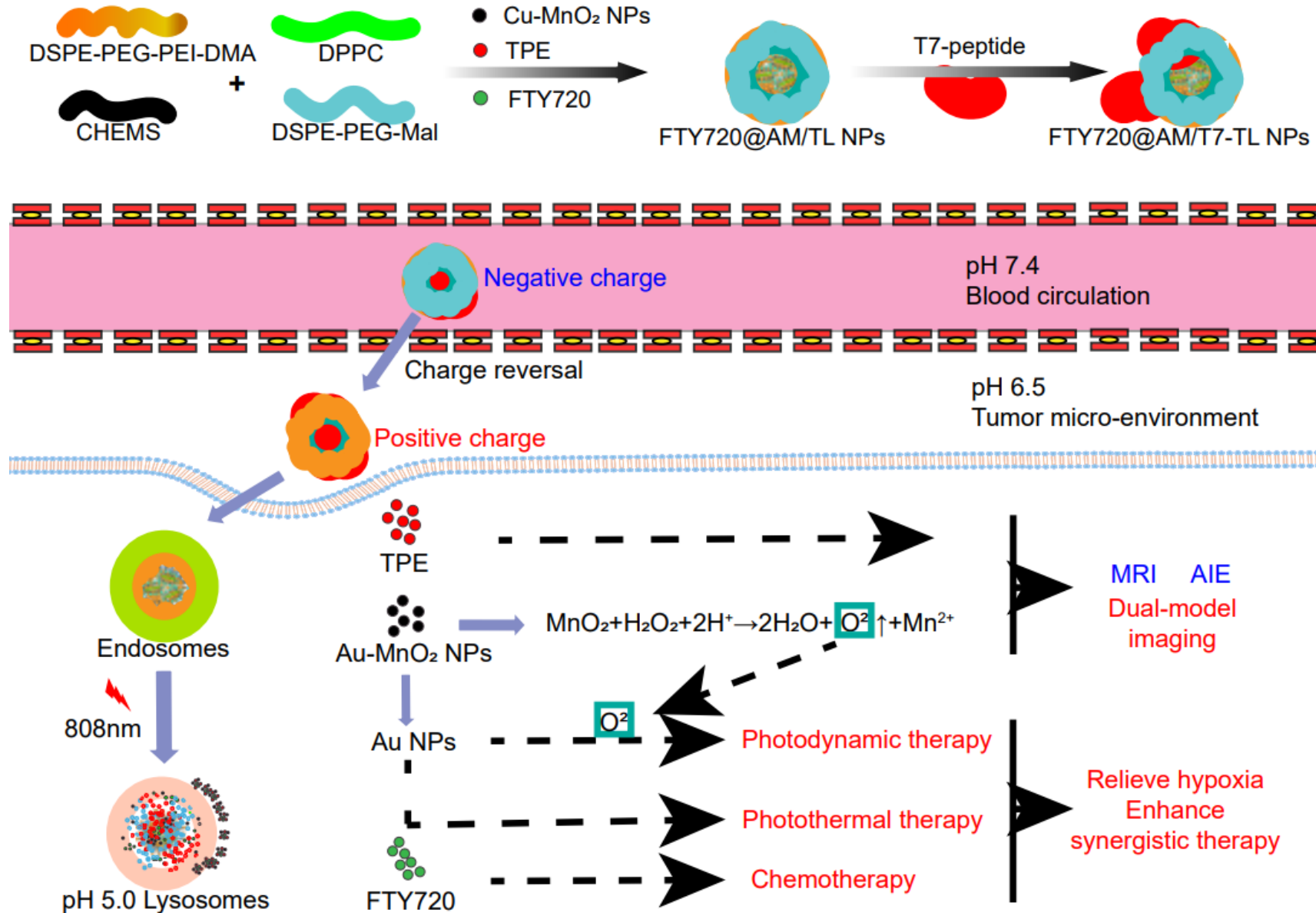


# Stimulus-responsive strategies





# Stimulus-responsive strategies





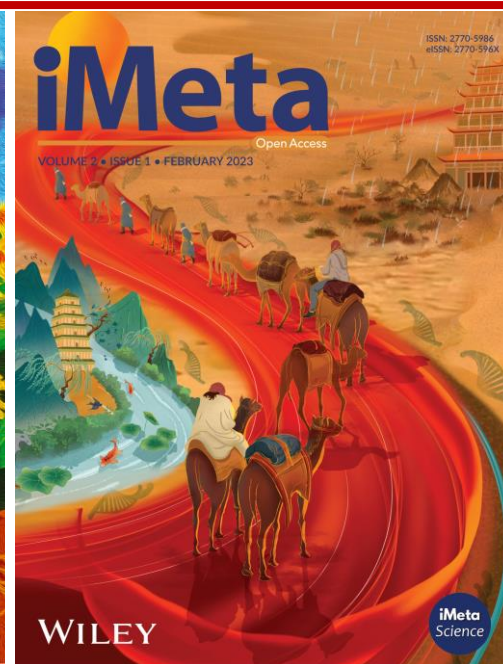
# Conclusion and Future Perspectives

- ❑ Hepatocellular carcinoma (HCC) poses a serious threat to human health and has garnered significant attention in the medical field. Nanotechnology has introduced new hope in HCC treatment through nanomedicine, enabling targeted drug delivery and controlled release for enhanced efficacy.
- ❑ Despite the benefits, challenges in the clinical translation of nanomedicine persist, necessitating further research to address issues related to biocompatibility and toxicity for improved safety and efficacy.
- ❑ Enhancing the understanding and application of nanomedicine among clinical practitioners is crucial to optimize its utilization in clinical practice, while research on the characteristics of nanomaterials and combined treatment methods can further improve HCC treatment outcomes.

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