

Nanomedicine and Nanoscale Delivery VII

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Myeloid Cell-nanospy System Rebalance the Immunosuppressive State of HCC Pre-metastatic Niche to Inhibit Metastasis

No.726

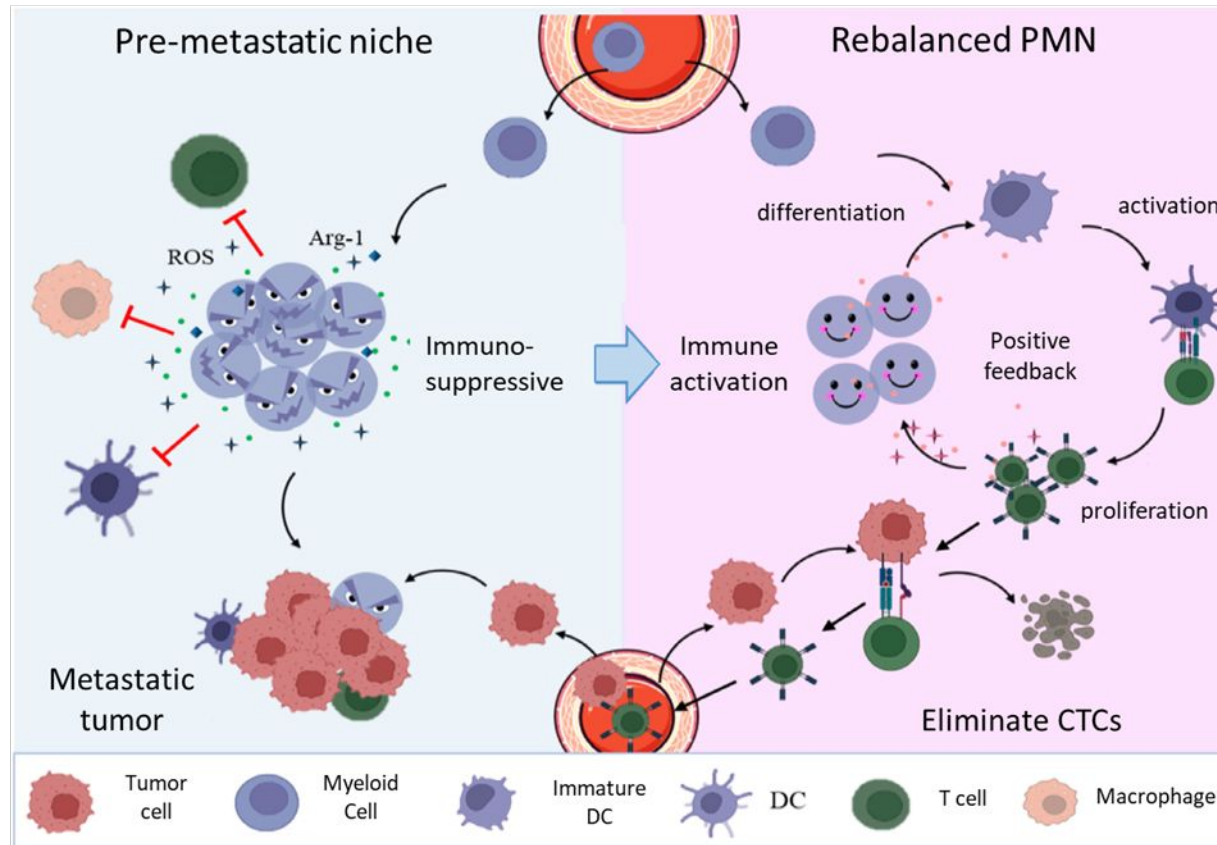
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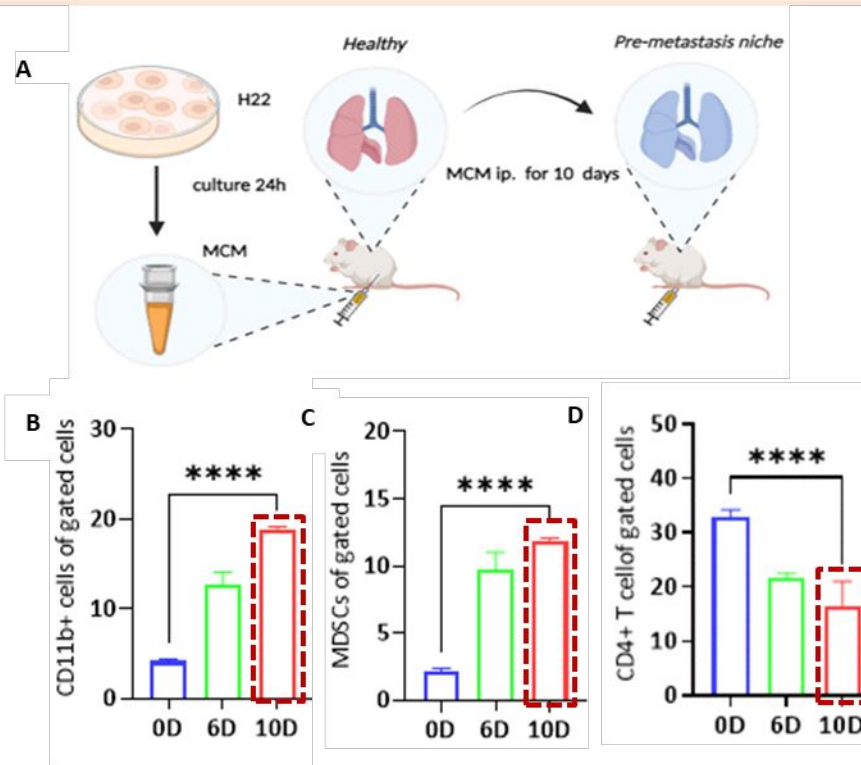


Pre-metastatic Niche (PMN): A myeloid-rich, T-cell-poor immunosuppressive microenvironment promotes metastasis



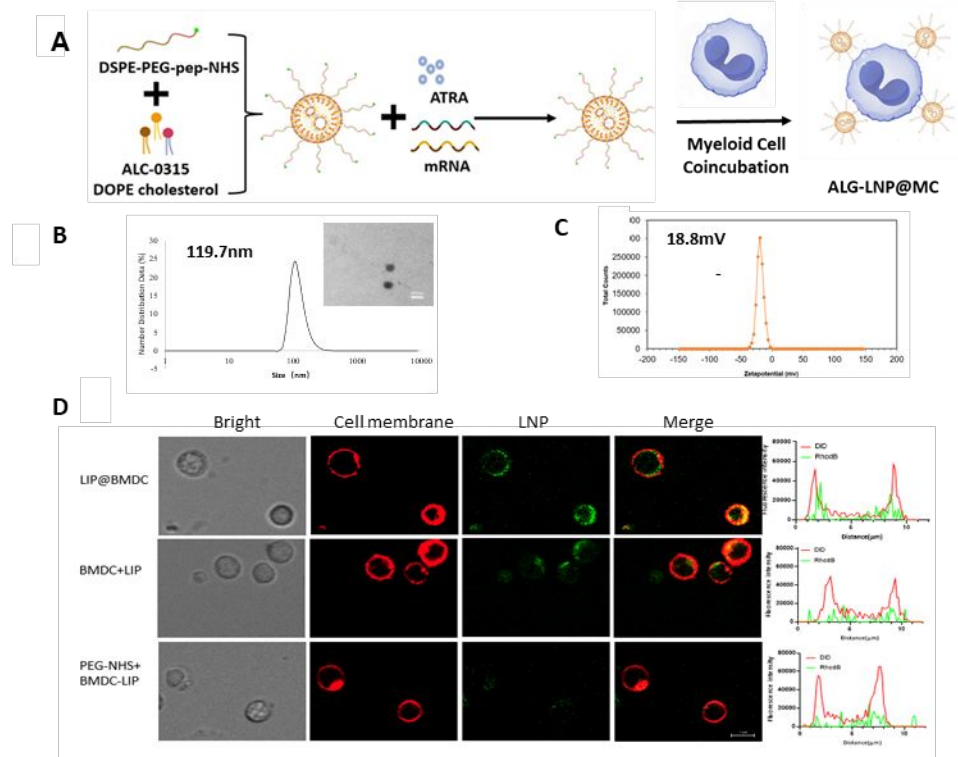
- We designed an Myeloid Cell-nanospy System utilizing myeloid cells as carriers of nanoparticles to target the PMN through the homing of myeloid cells.
- The Myeloid Cell-nanospy System deliver all-trans retinoic acid (ATRA) to promote myeloid cells differentiation, GPC3 antigen to activate DC cell maturation, and IL-12 to help T cell proliferation, to PMN site.
- The Myeloid Cell-nanospy System rebalance immune suppression and activate antitumor immunity.

1. *In vivo* PMN formation



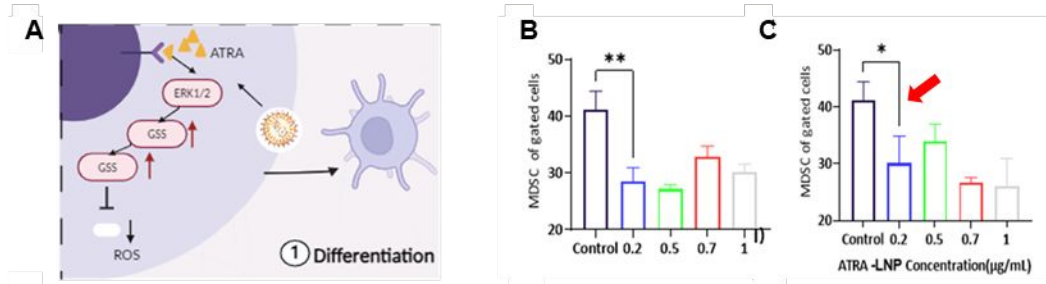
- CD11b+ marrow-derived cells ↑
- MDSC cells ↑
- CD4+ T cells ↓

2. Preparation of Myeloid Cell-nanospy System

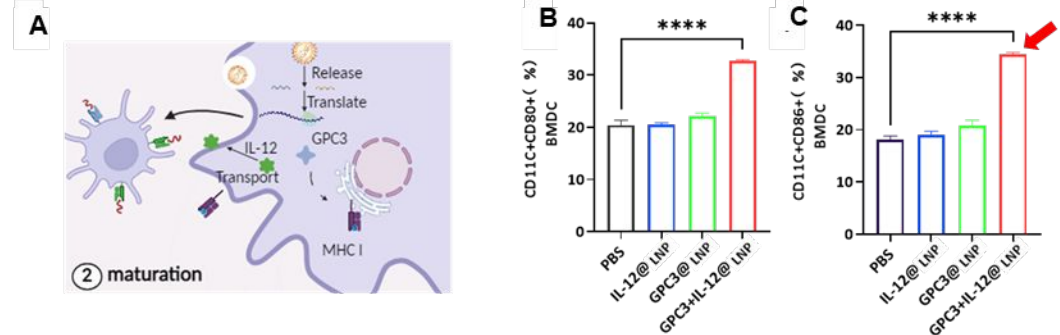


- AIG-LNP@MC was successfully prepared
- The LNP were stably loaded on the cell surface

3. Promote the differentiation of MDSC *in vitro*



4. Promote the maturation of DC *in vitro*



Conclusions and perspectives

- ✓ The HCC PMN was simulated established and evaluated its immune environment.
- ✓ Preparation and characterization of the Myeloid Cell-nanospy System and evaluated its ability of promoting differentiation and maturation.
- ✓ T cells proliferation *in vitro* , anti-metastasis *in vivo* , will be evaluated.

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