

New cell therapy cures metastatic cancer in mouse

Metastatic cancer remains the leading cause of cancer mortality and is poorly controlled by current immunotherapies, particularly in the presence of an immunosuppressive tumor microenvironment. Standard NK and T cell therapies lose activity in PGE2-rich metastases, leaving a high residual risk after surgery and systemic treatment. The RESURRECT platform provides allogeneic, off-the-shelf NK and T cell products that retain full cytotoxic and immunostimulatory function in metastatic disease.



Allogeneic, off-the-shelf use possible

The mechanism of action targeted by the inventive RESURRECT cells is conserved from mouse to human cancers. A strong advantage is that the RESURRECT cell therapies can be used in an allogeneic setting, allowing their off-the-shelf use as future cancer drug components.

- 01 Maintains full NK/T cell effector function in PGE2-rich, immunosuppressive metastases
- 02 Demonstrated eradication of primary tumors and distant metastases in multiple mouse cancer models
- 03 Allogeneic, off-the-shelf cell therapy platform, extendable to NK, TCR-T, CAR-T and TIL products
- 04 Mechanistically validated EP2/EP4-targeting concept with human NK/T cell data

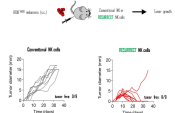
REFERENCES:



Lacher et al., Nature (2024)

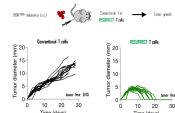


RESURRECT NK cells efficiently eliminate primary melanoma tumors



Tumor growth of aggressive melanoma transplanted into the skin (subcutaneously) of wildtype mice with conventional NK cells or mice with RESURRECT NK cells

RESURRECT cells efficiently eliminate primary melanoma tumors



Tumor growth of aggressive melanoma transplanted into the skin (subcutaneously) of wildtype mice with conventional cytotoxic CD8+ T cells or mice with RESURRECT cytotoxic CD8+ T cells

CHALLENGE

Metastases cause most cancer deaths and often develop strong immunosuppressive mechanisms. High PGE2 levels in many solid tumors and metastases shut down NK and T cell function via EP2/EP4, limiting current adoptive cell therapies and checkpoint inhibitors. Systemic PGE2 blockade has shown little benefit, highlighting the need for cell therapies that remain active in PGE2-rich, immunosuppressive environments.

INNOVATION

RESURRECT is a cell therapy platform for NK, T and tumor-infiltrating lymphocyte (TIL) candidates in which EP2/EP4 signaling is selectively abrogated by gene knockout or targeted inhibition. These cells are intrinsically resistant to PGE2-mediated suppression and preserve cytotoxicity and effector cytokine/chemokine secretion in tumors and metastases. In multiple mouse models (melanoma, colorectal, pancreatic cancer), RESURRECT cells eradicate primary tumors and metastases, outperforming conventional cell therapies and enabling a metastasis-focused platform.

01 Basic principles observed · 02 Technology concept formulated · 03 Experimental proof of concept · 04 Technology validated in lab · 05 Technology validated in relevant environment · 06 Technology demonstrated in relevant environment · 07 System prototype demonstrated in operational environment · 08 System complete and qualified

TRL 08
TRL 07
TRL 06
TRL 05
TRL 04
TRL 03
TRL 02
TRL 01

Technology Readiness Level (TRL)



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