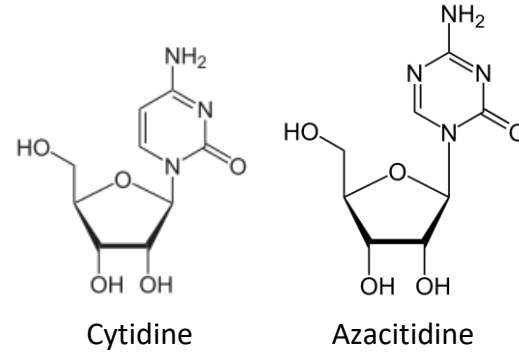
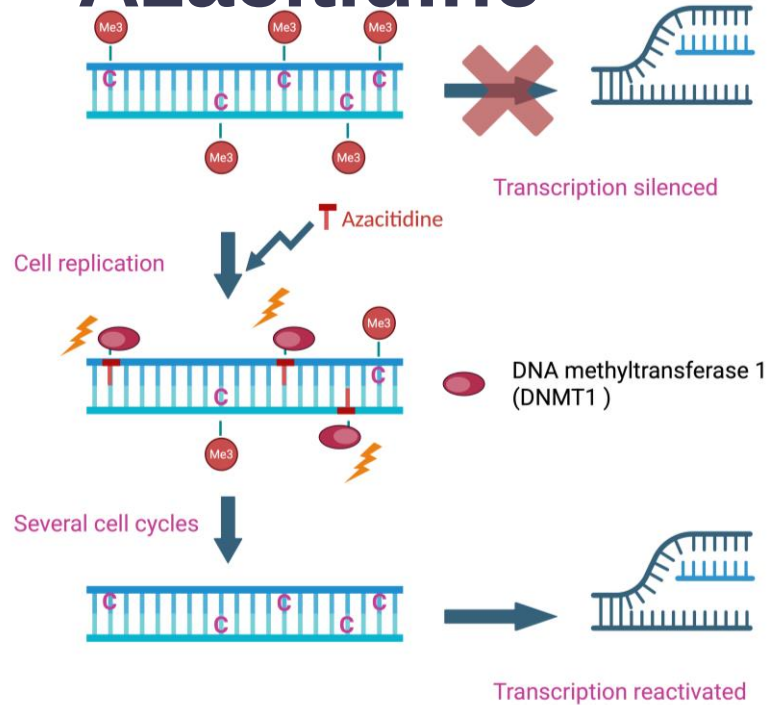


Targeting a novel oncogene with an azacitidine-based prodrug nanocarrier to elicit immunogenic cell death for advanced cancer therapy

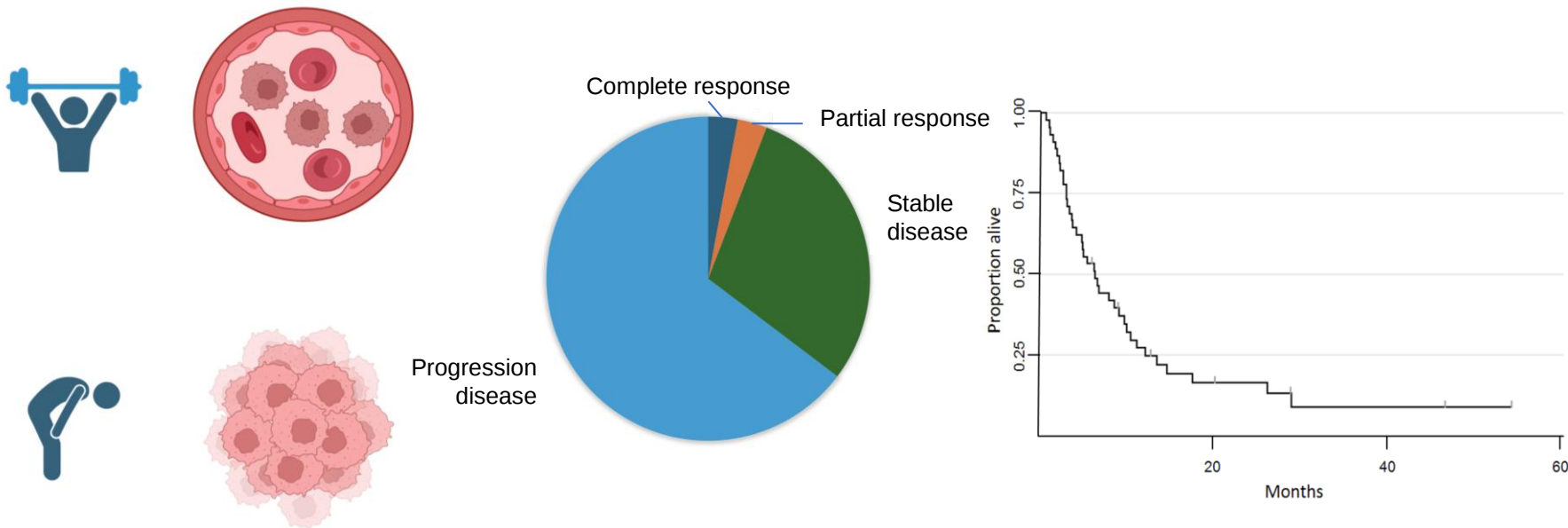
Speaker: Bei Zhang
University of Pittsburgh
Song Li lab

Azacitidine



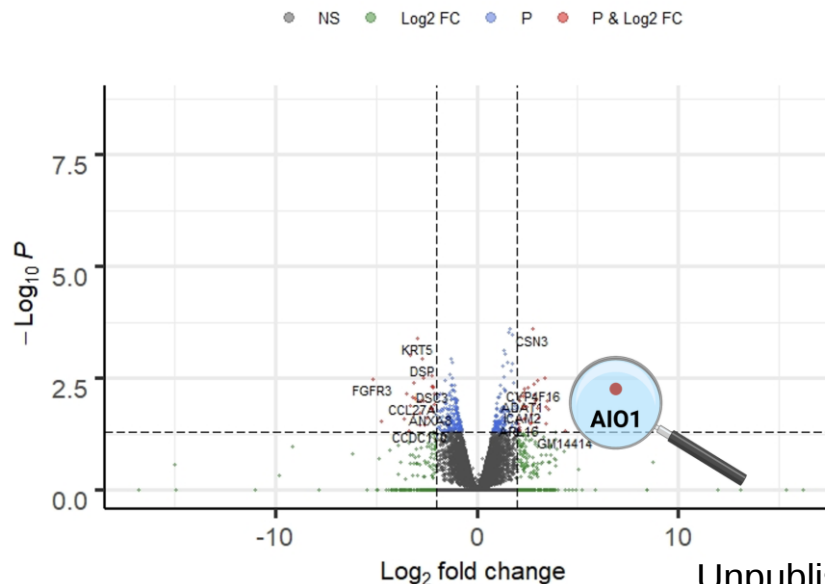
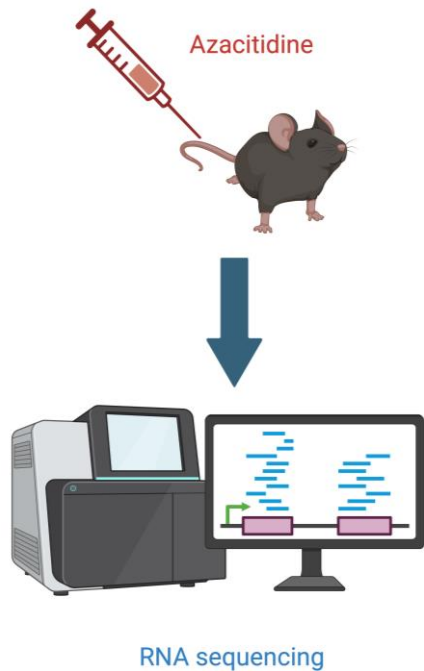
Inert, normal
building block
of DNA or RNA

Azacitidine and solid tumor



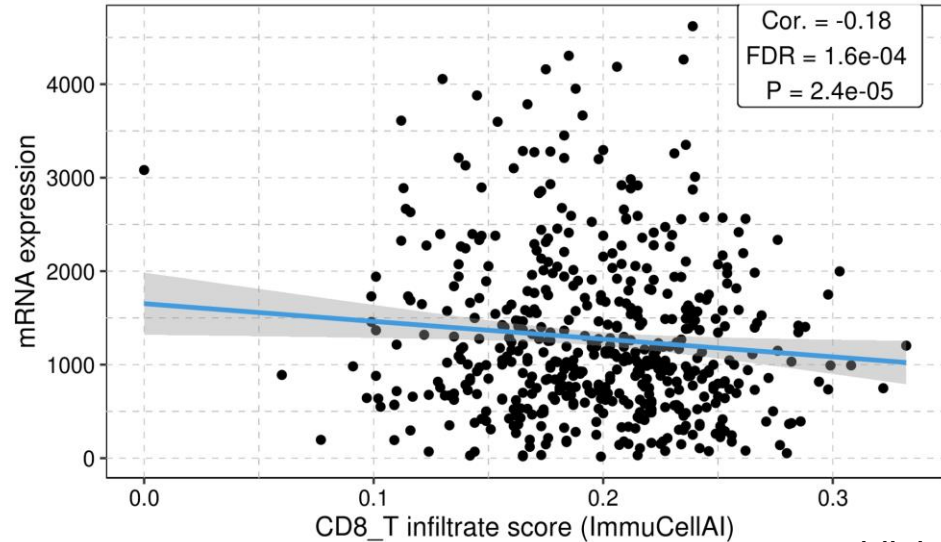
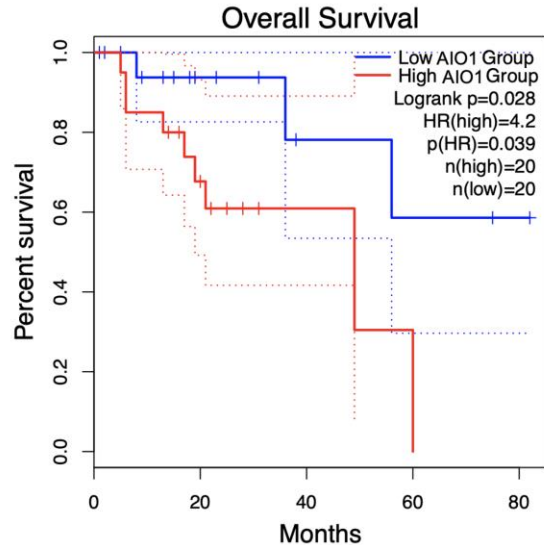
NCT00387465

Azacitidine and AIO1



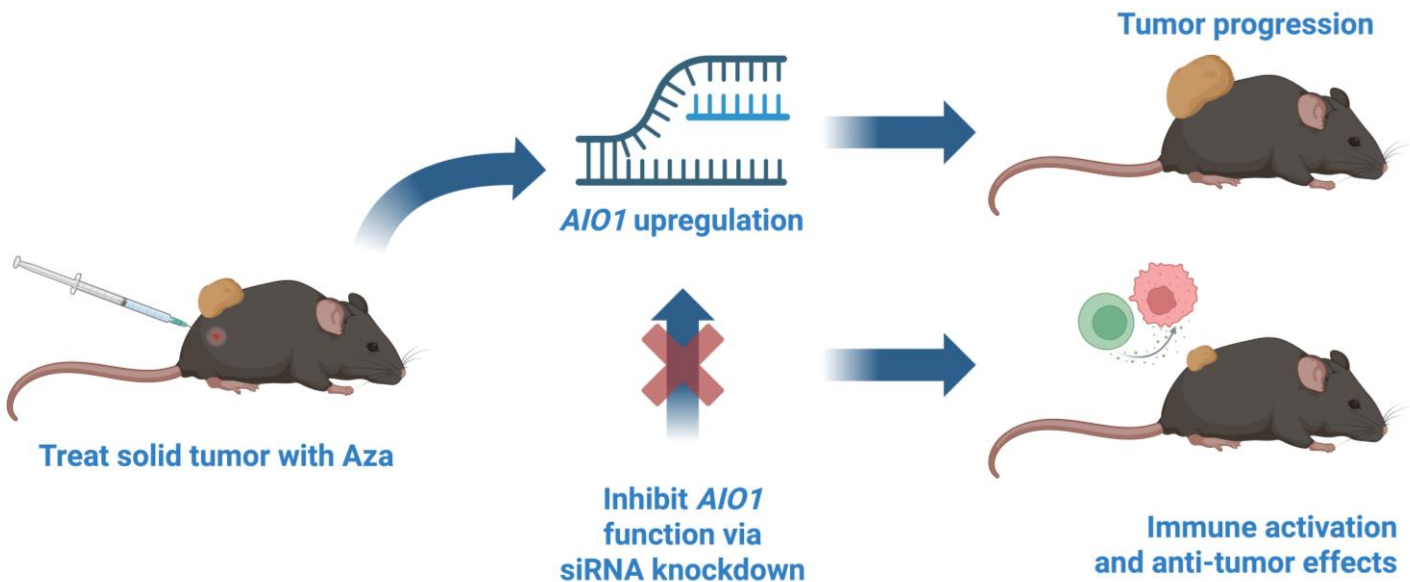
Unpublished data
Photo prohibited

AIO1, a novel oncogene



Unpublished data
Photo prohibited

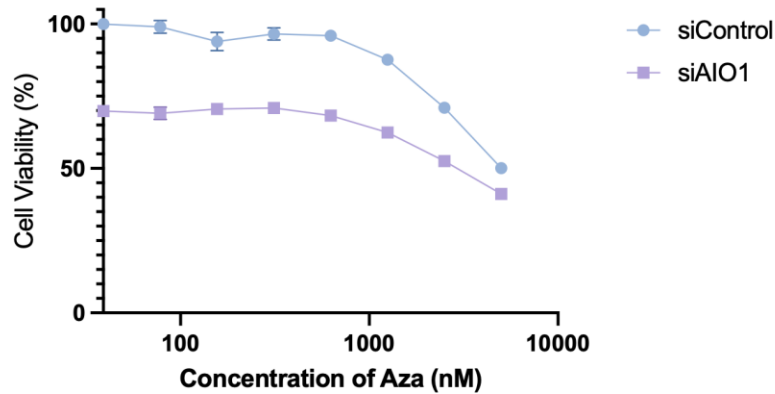
Hypothesis



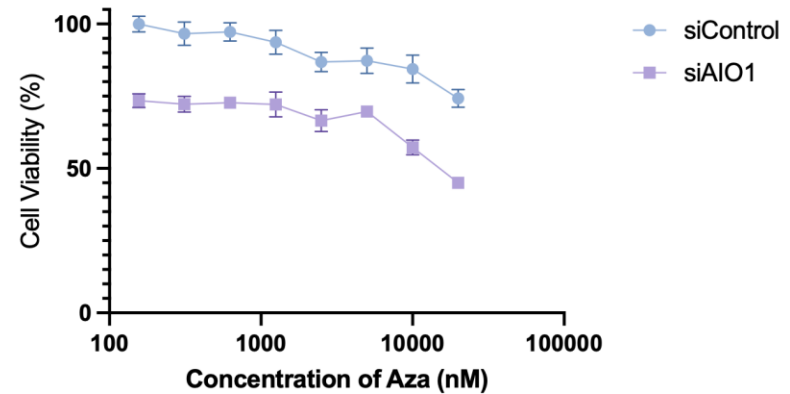
Aims

- Understand the novel role of ***AIO1*** in Aza resistance
- Understand the role of **siAIO1** in modulating the immune response
- Assess the therapeutic potential and underlying mechanism of codelivery of Aza and siAIO1 using PLL-PAza nanocarrier

AIO1 KD inhibits cell proliferation



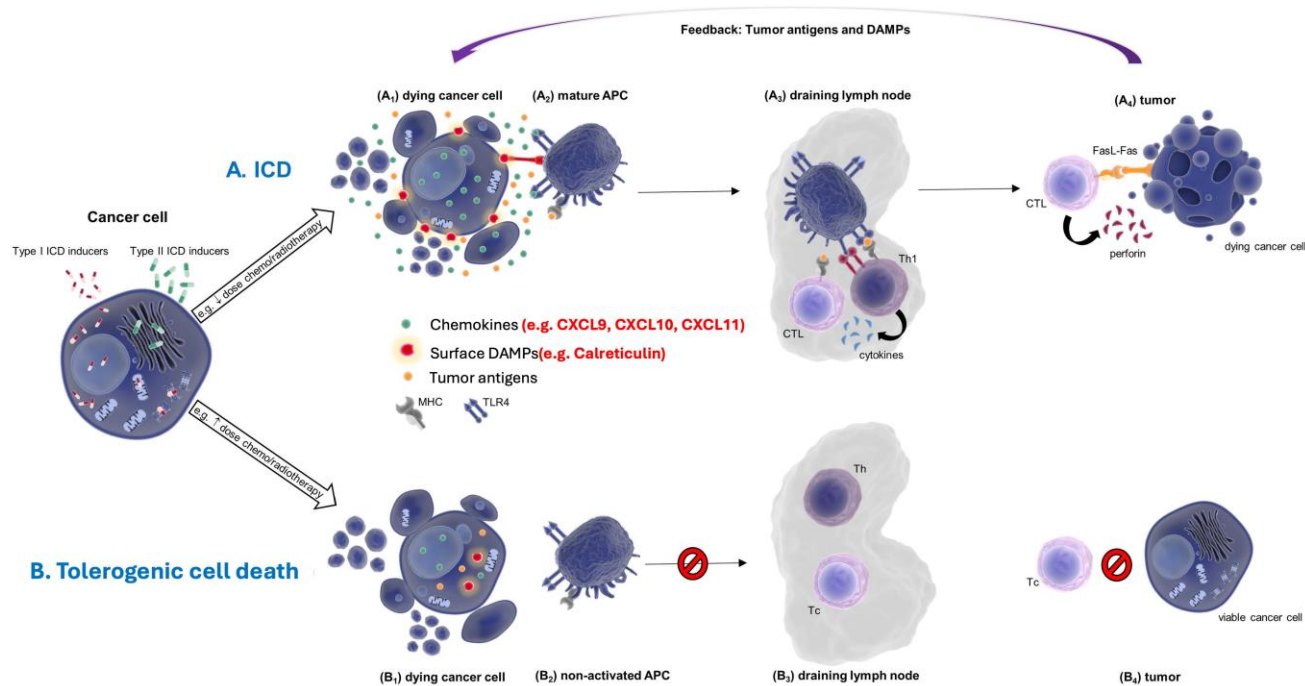
Cell line: A549,
Human non-small cell lung cancer
Treated for 96h



Cell line: NCI-H522,
Human non-small cell lung cancer
Treated for 96h

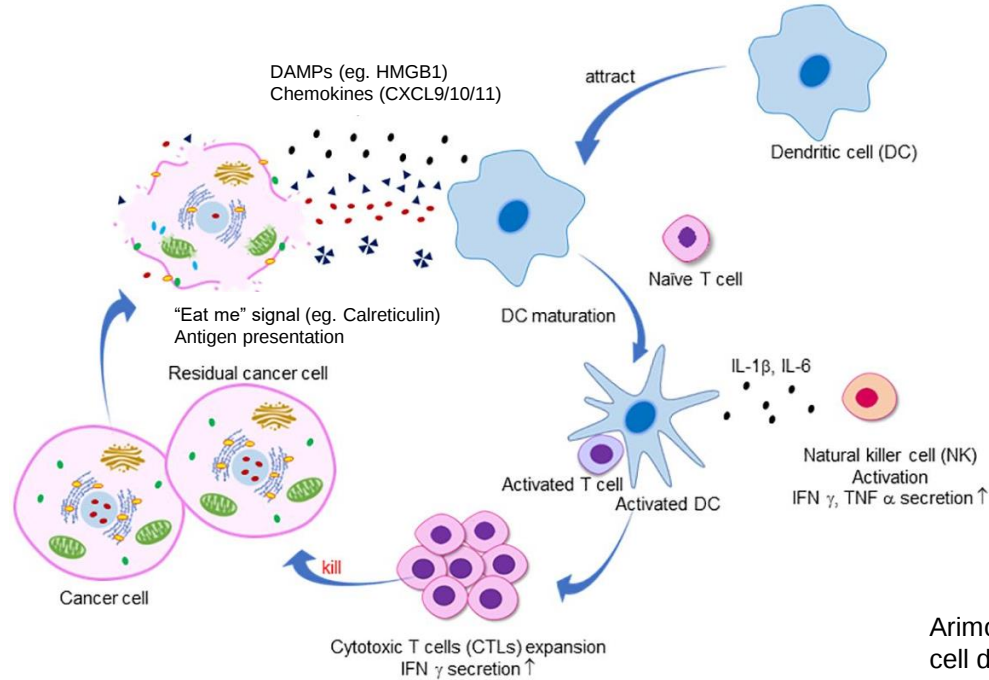
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Photo prohibited

Cell death pathways



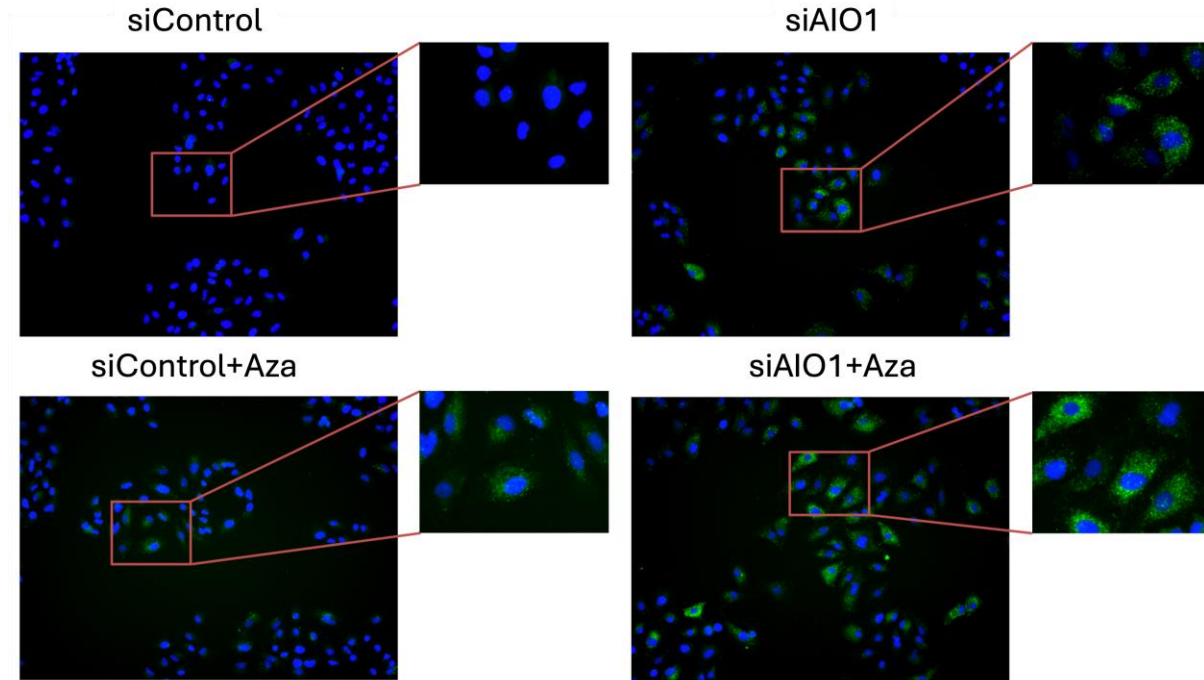
Anastasios B., et al.
Immunogenic Cell Death,
DAMPs and Prothymosin α as a
Putative Anticancer Immune
Response Biomarker
. 2022

Immunogenic cell death (ICD)



Arimoto KI, et al. Emerging role of immunogenic cell death in cancer immunotherapy. 2024

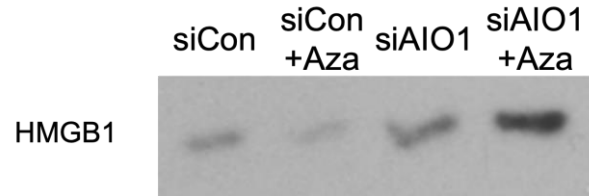
AIO1 KD may upregulate ICD markers



Cell line: A549
Green: Calreticulin (CRT)
Blue: DAPI

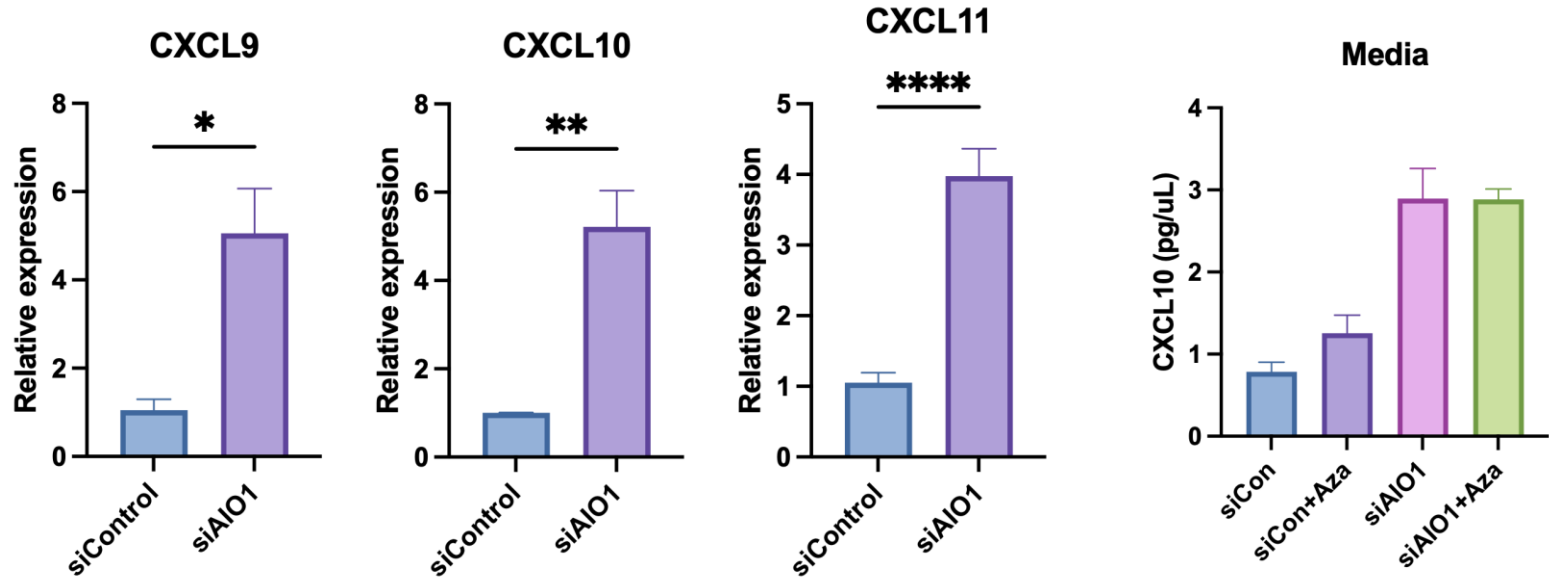
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AIO1 KD may upregulate ICD markers



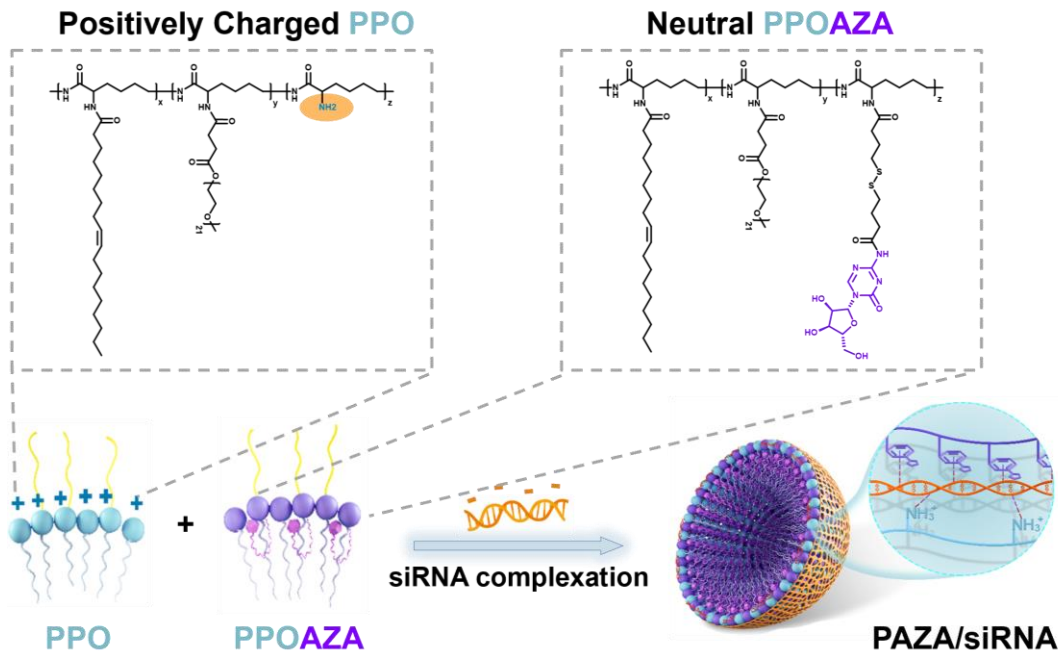
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AIO1 KD upregulates CXCR3 ligands

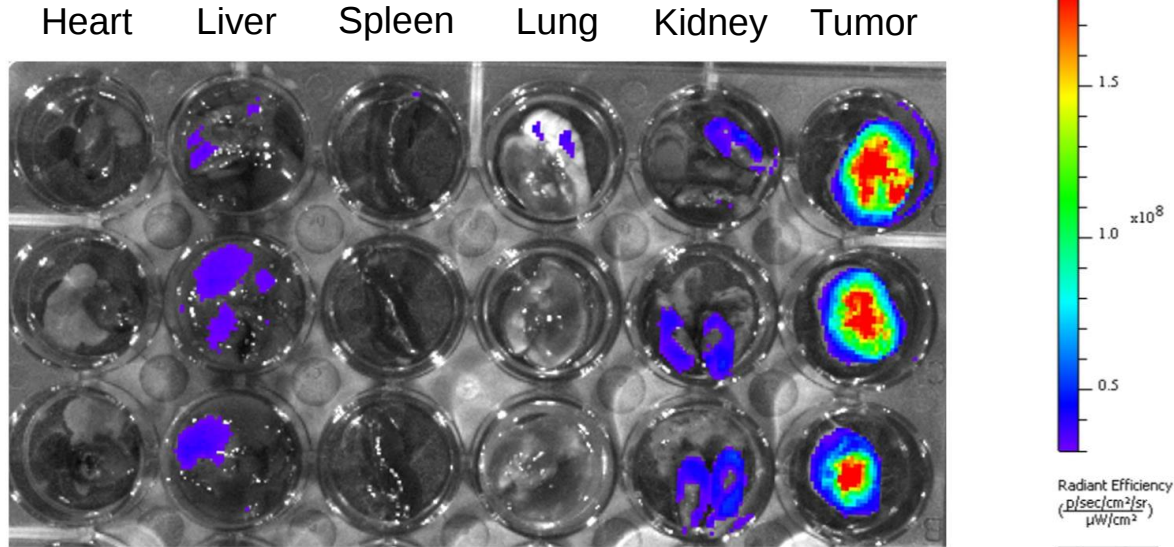


Unpublished data
Photo prohibited

Co-delivering Aza and siRNA with a nanocarrier



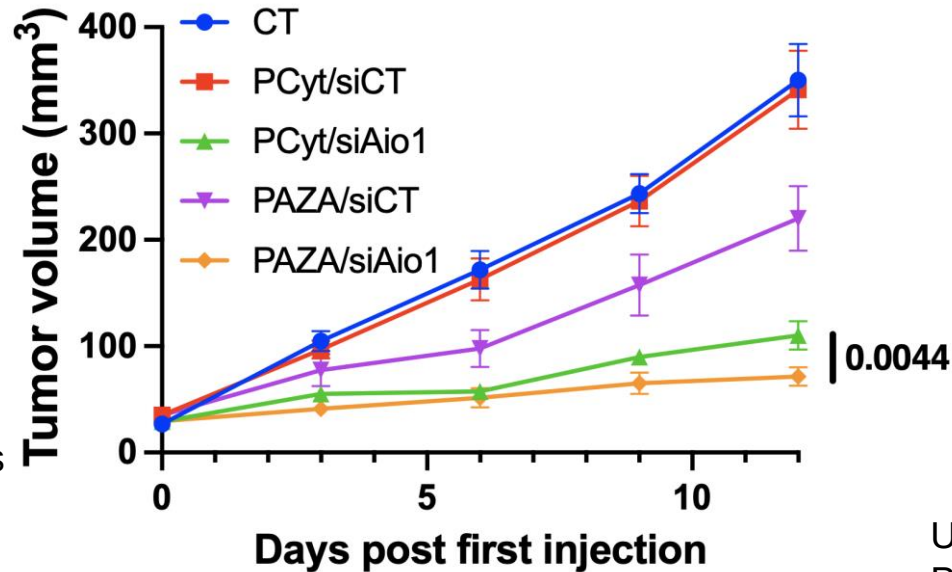
Co-delivering Aza and siAio1 with a nanocarrier



Probe: Cy5.5-siRNA

Unpublished data
Photo prohibited

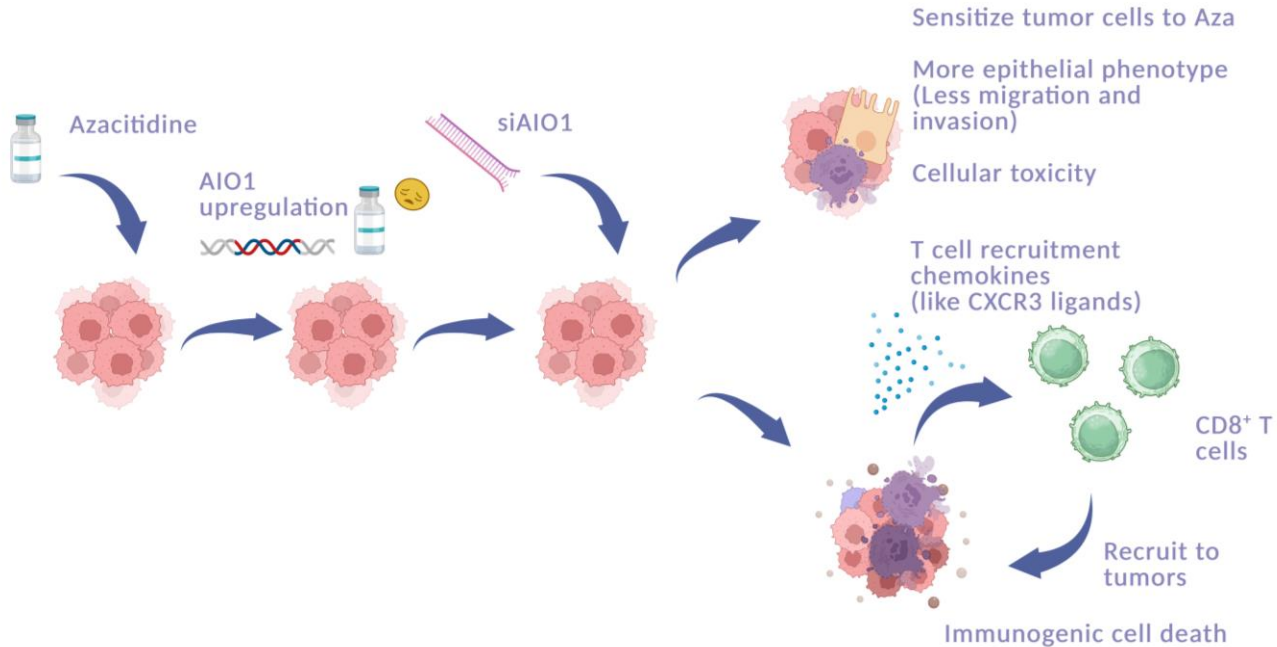
Co-delivering Aza and siAio1 with a nanocarrier



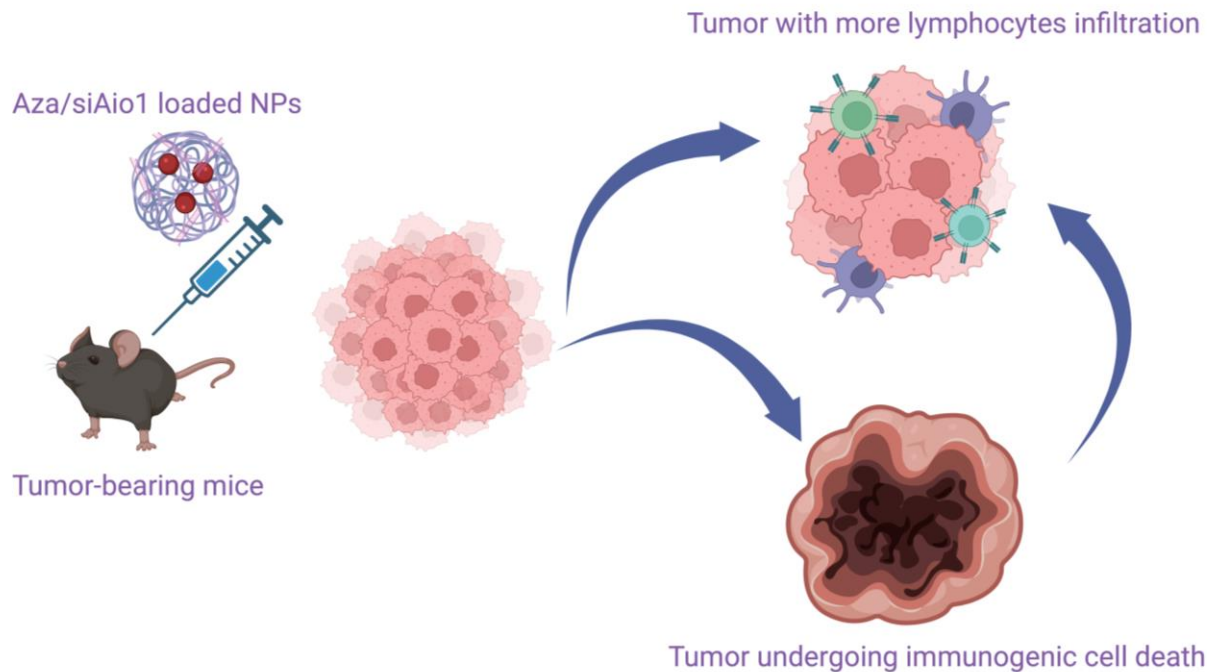
PCyt: Cytidine conjugated NPs
Negative control NPs
siCT: Negative control siRNA

Unpublished data
Photo prohibited

Summary



Summary



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- Song Li, MD PhD
- Yixian Huang, PhD
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PHILADELPHIA, PA
JULY 13-18, 2025





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PhD candidate at University of Pittsburgh



LinkedIn Connection Big Welcome!