

# Increasing anti-tumor efficacy by establishing a tumor-derived immune response

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## Introduction

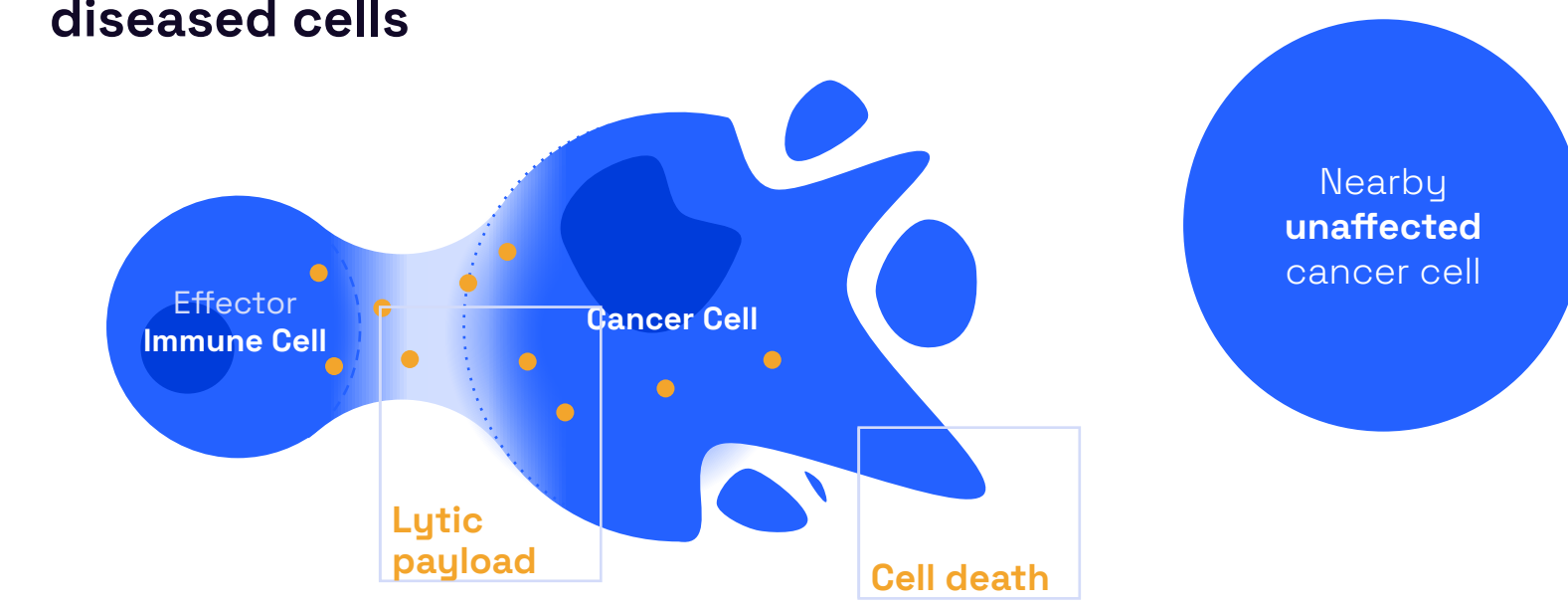
Edity Therapeutics has developed a groundbreaking platform technology that delivers therapeutic proteins to cancer cells with exceptional precision and efficiency.

### ED007

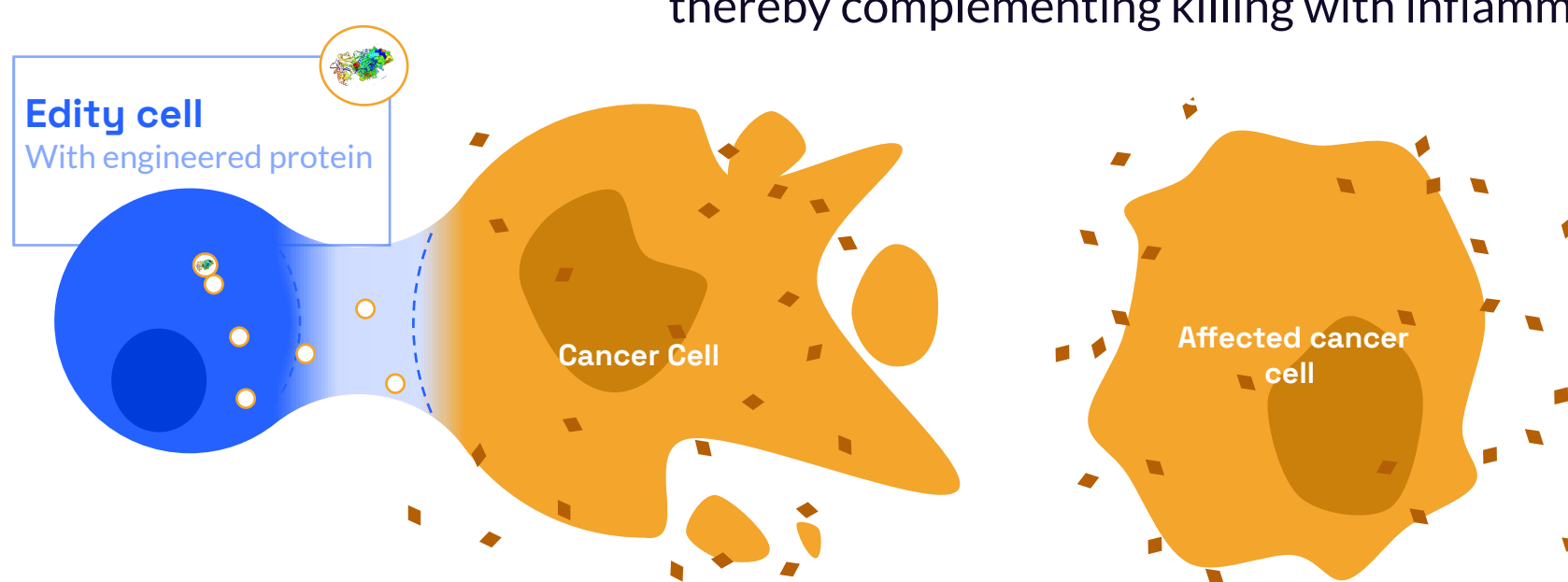
The company has initiated an investigational clinical program, ED007, focused on delivering pro-inflammatory immune sensor proteins into cancer cells. We utilize CAR technologies to guide engineered immune cells to the tumor, we then transfer pro-inflammatory immune sensor proteins that we have engineered through an AI-algorithm. These novel proteins convert the cancer cells into inflammation mediators that can recruit the innate and adaptive arms of the immune system to the tumor.

By harnessing the body's natural immune mechanisms and enhancing them with targeted protein delivery, Edity Therapeutics' platform represents a potentially transformative approach to cancer treatment, particularly for solid tumors that have proven resistant to existing immune checkpoint therapies.

In nature, immune cells deliver a toxic payload to eliminate diseased cells



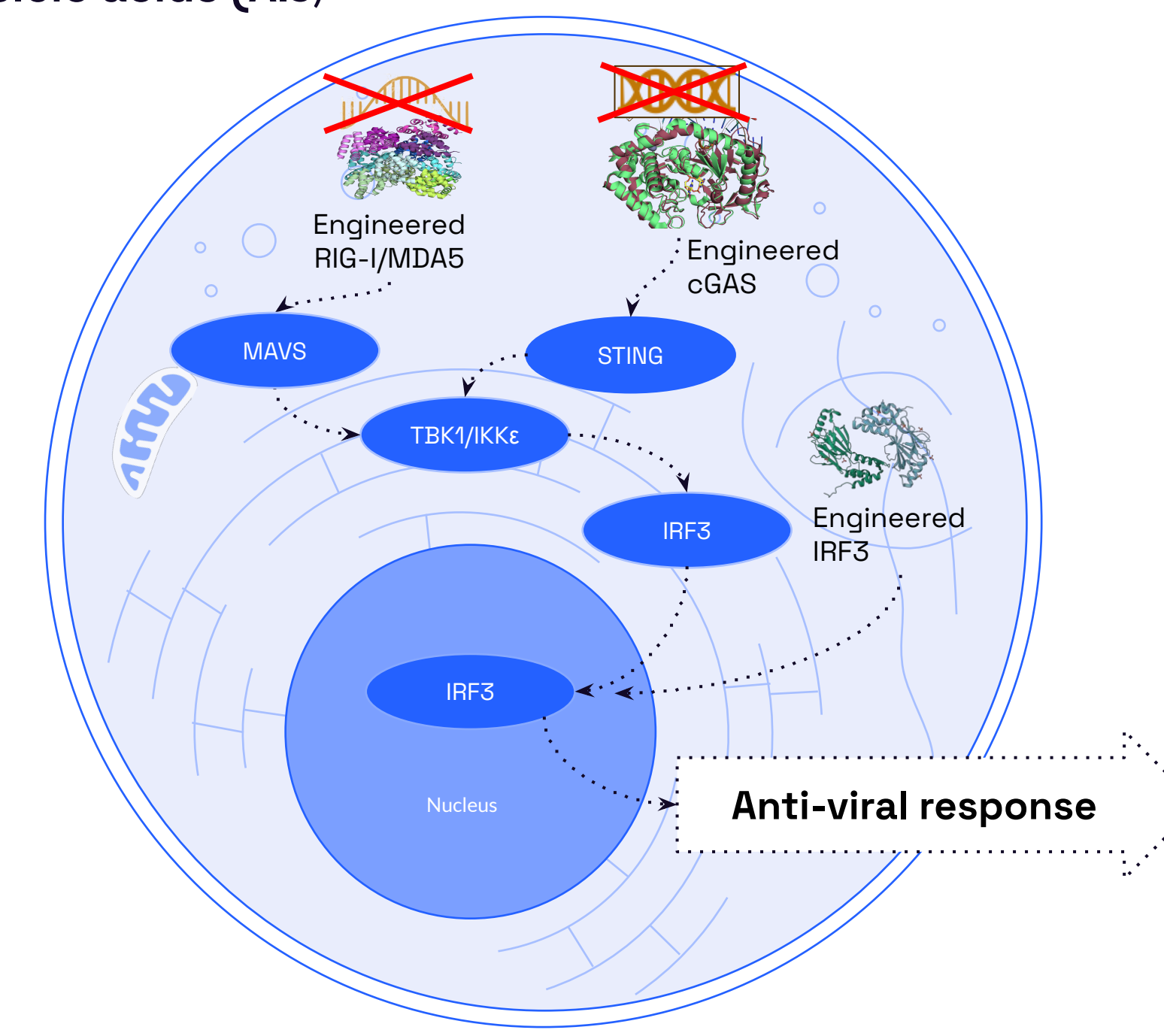
We redesign the immune cells to deliver protein therapeutics



The protein transferred by the engineered immune cell transforms each affected cancer cell into a factory of inflammatory mediators, that recruits the immune response to the tumor site, thereby complementing killing with inflammation.

## Constitutively active Immune Sensors

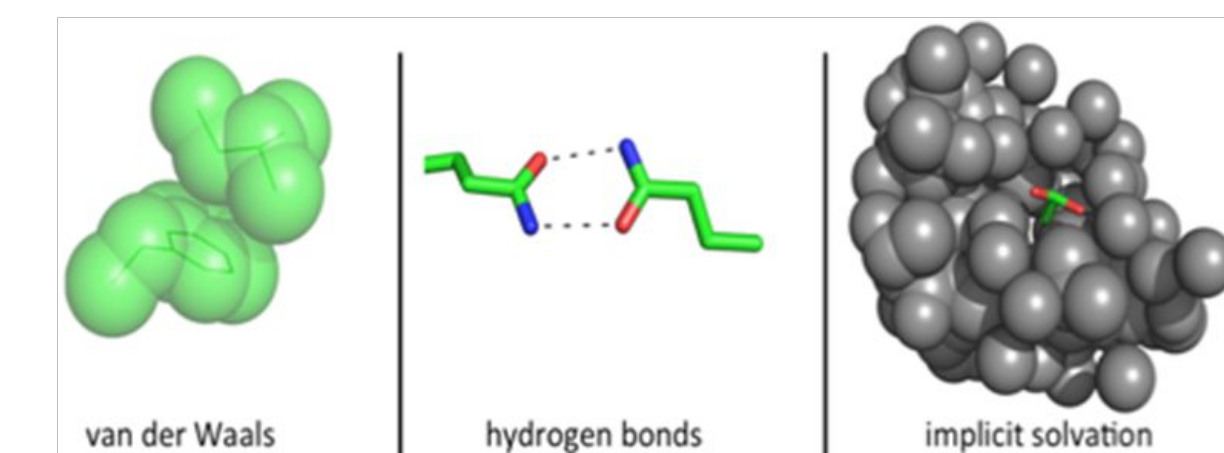
The therapeutic protein is an immune sensor, that was engineered to constitutively activate its downstream pathway, independently of the presence of activating nucleic acids (AIS)



Adapted from Zhubing Shi and Zhaocai Zhou (2017). MST kinases in innate immune signaling. Cell Stress 2(1): 4-13. doi: 10.15698/cst2018.01.119

We use several tools  
Rosetta Suite for computational modeling

Weak & short-range physical forces:



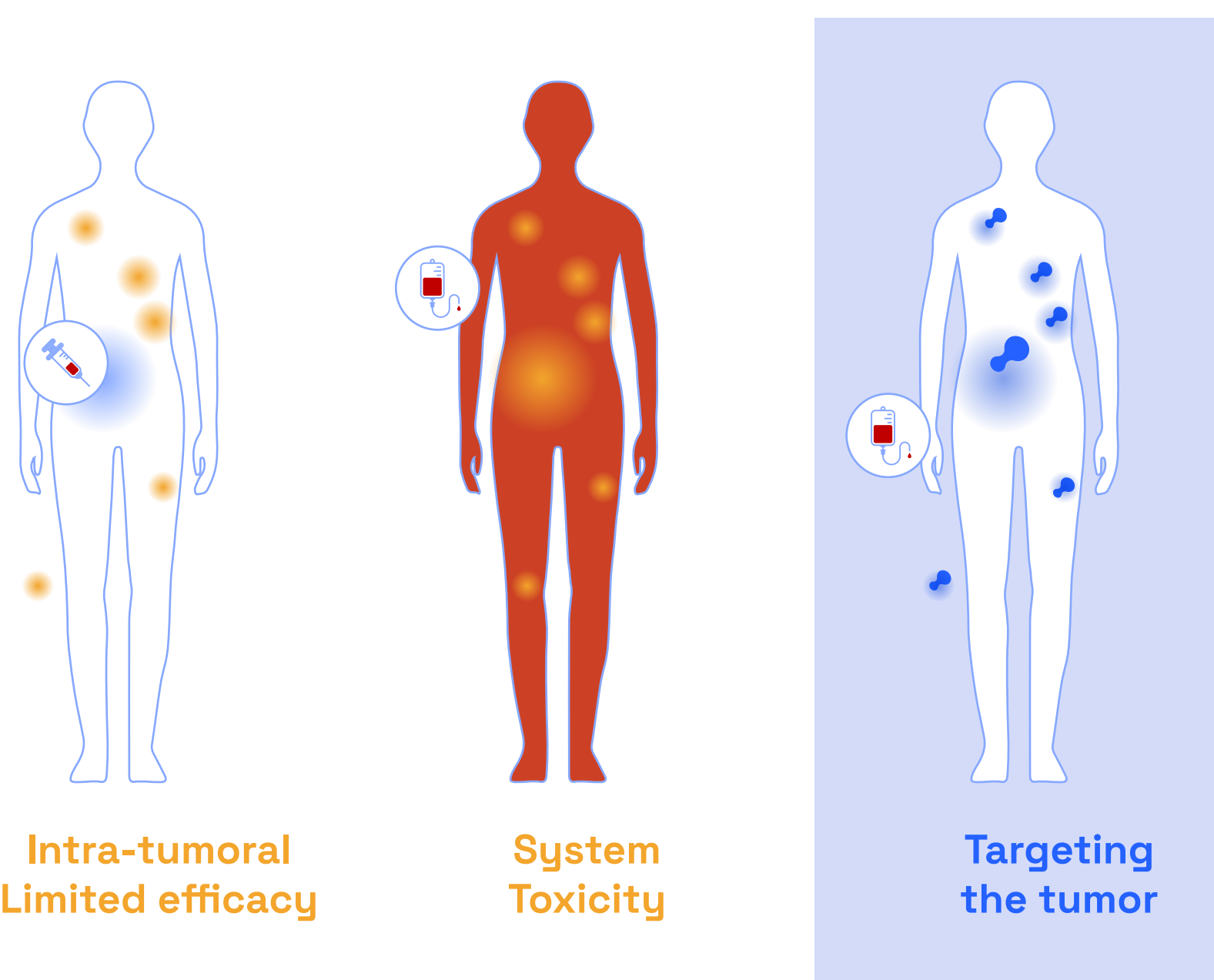
AlphaFold for design verification



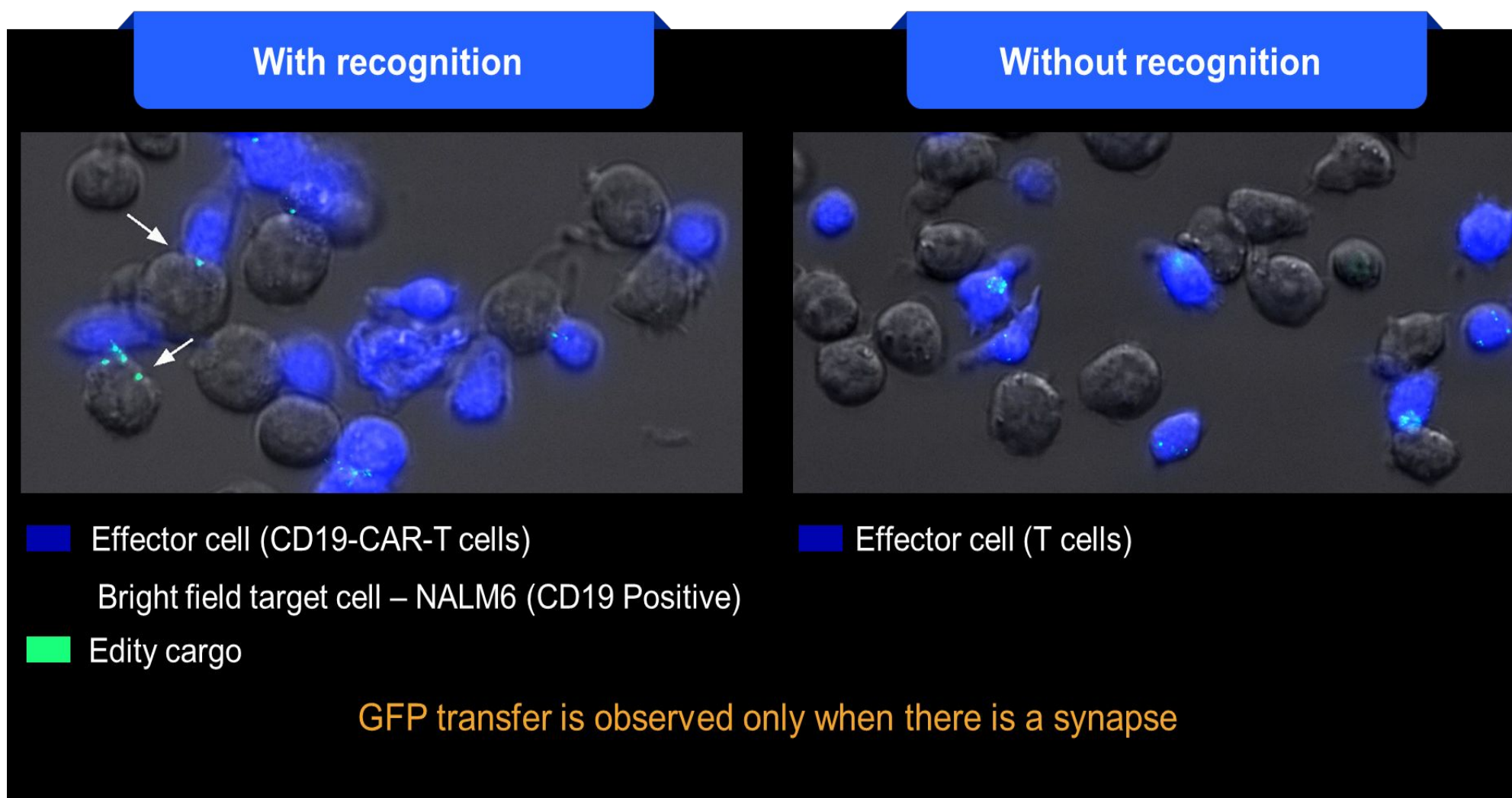
Edity's proprietary AI algorithm developed in-house optimizes our therapeutic proteins

- Results in improved protein function
- Evidence for improved protein delivery

Improved Safety: Edity's technology targets lesions throughout the body without causing systemic toxicity

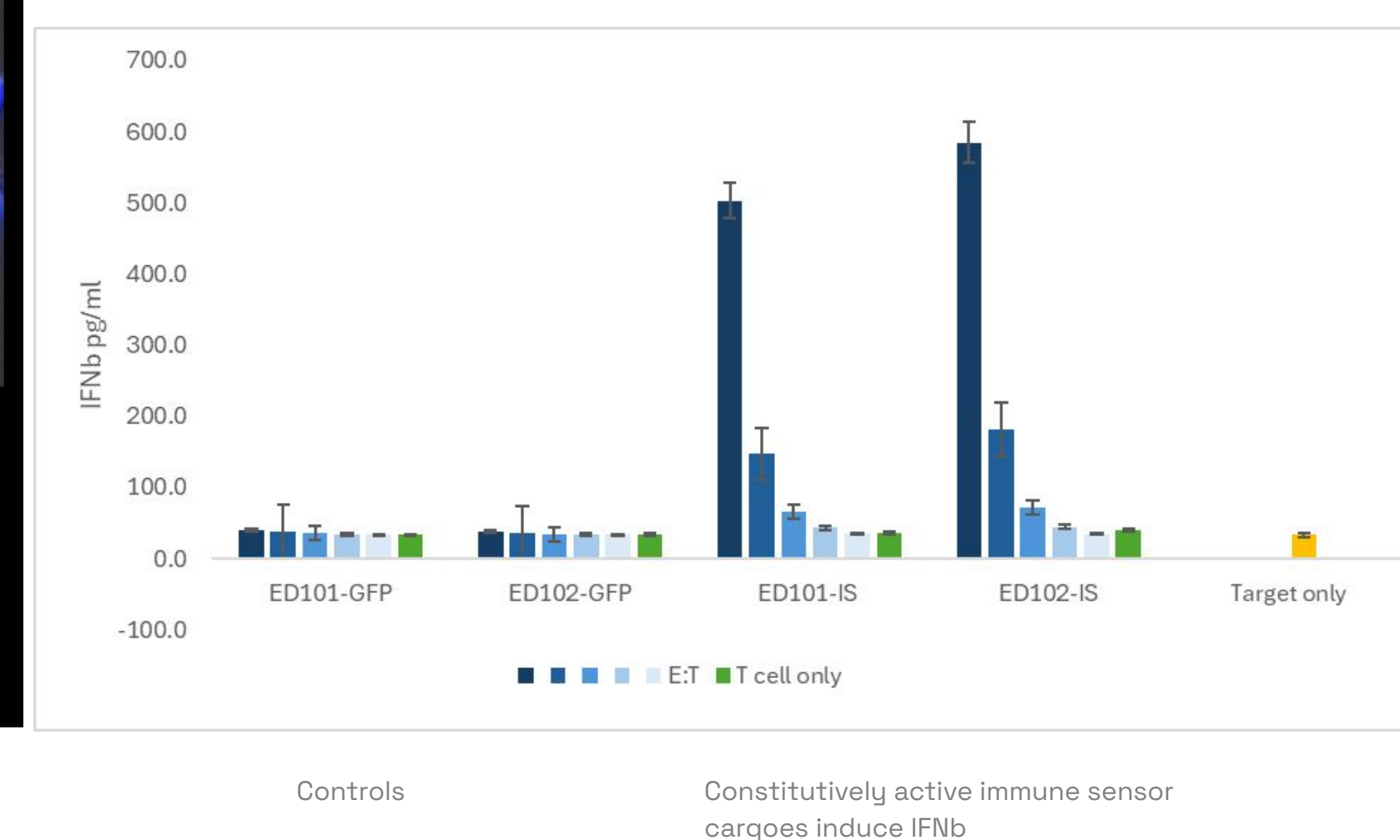


CART cell cargo transfer only occurs when there is a synapse with the target cell



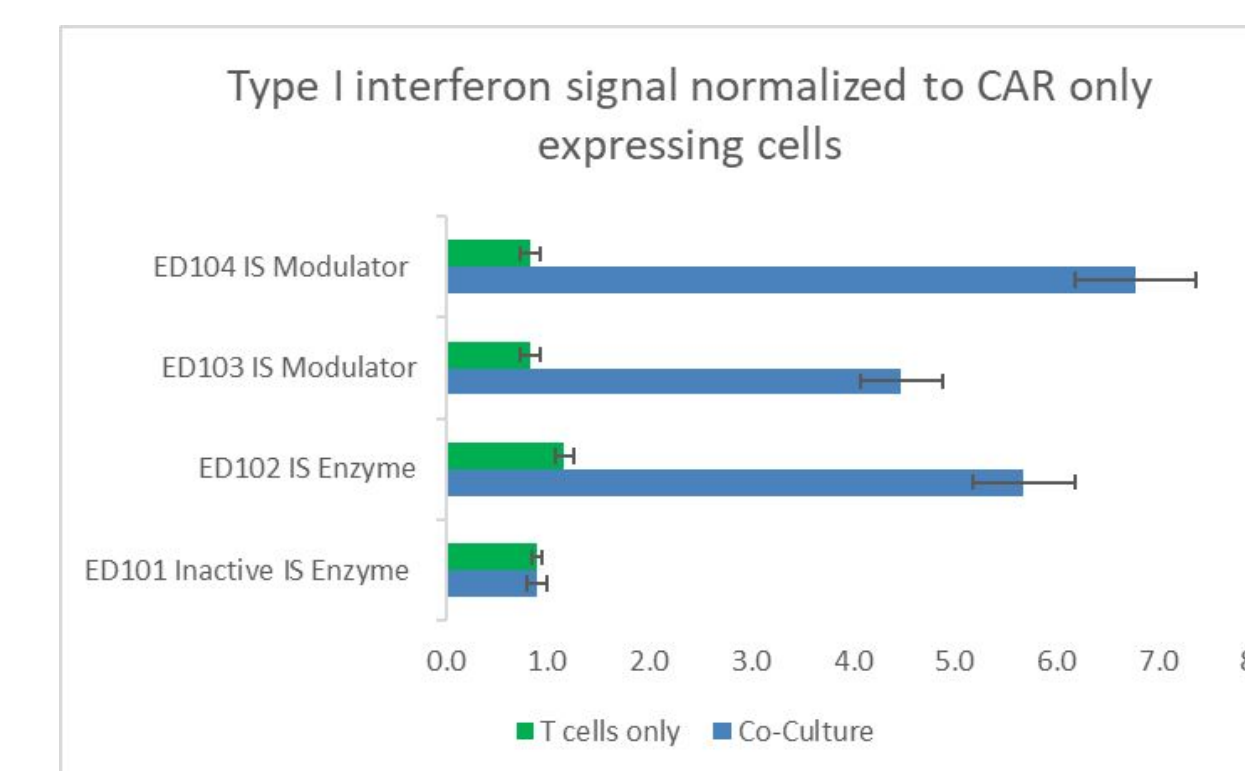
GFP transfer is observed only when there is a synapse

Functional Transfer and Induction of Type I Interferon by AI-designed immune sensor (IS)

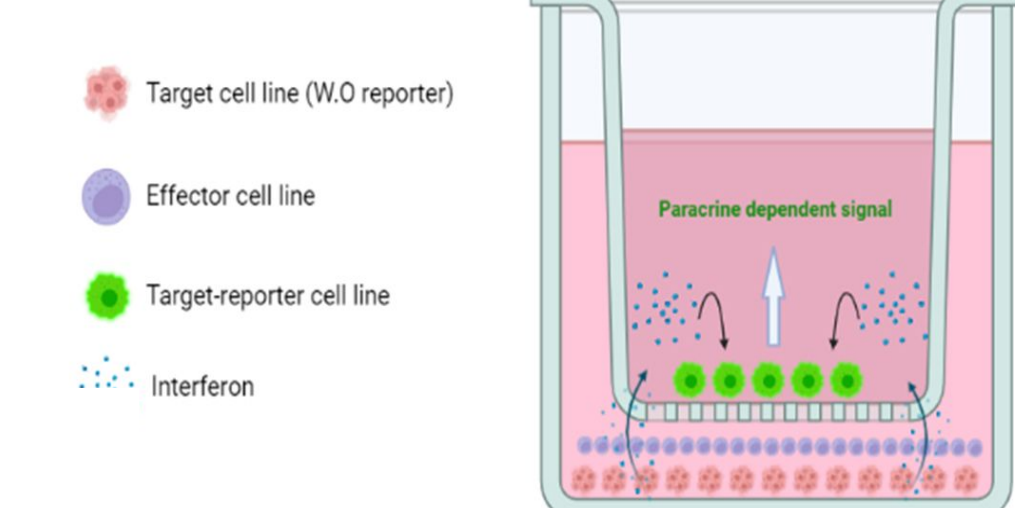


Dose-dependent IFN $\beta$  following transfer of iAI-designed immune sensor mutants

Paracrine effect: Product candidate also impacts antigen-negative cells



Type 1 interferon is transferred to the top plate cells and induces inflammation



## Summary

Edity is pioneering an innovative platform technology that harnesses the immune system to deliver therapeutic proteins directly into the cytoplasm of target cells, offering a novel approach to modulate disease. The core technology has been substantiated through in vitro transfer of fluorescent proteins, with preliminary evidence of fluorescent protein cargo transfer in an intratumoral in vivo setting. In vitro proof of concept for the ED007 program has been successfully demonstrated through the functional transfer of enzymes, mediators, and transcription factors. Current research efforts are focused on demonstrating in vivo functional transfer of immune sensors following systemic adoptive cell transfer of ED007-CAR T cells. This technology holds immense potential as a versatile platform for delivering a wide range of therapeutic proteins.