

Marin Biologic Unveils White Paper on Engineered Immune Cell Therapy Breakthroughs

NOVATO, CA, UNITED STATES, October 31, 2025 /EINPresswire.com/ -- Marin Biologic Laboratories Inc. (MarinBio), a leading bioanalytical testing and regulatory compliance contract research organization (CRO) based in Northern California, today announced the release of a new white paper titled "[Defeating Disease with Genetically Engineered Immune Cells](#)". The

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*Dr. Tania Weiss, Ph.D.,
President & CEO, Marin
Biologic Laboratories*

publication explores the next generation of immune cell therapies, spotlighting how cutting-edge chimeric antigen receptor (CAR) technology is transforming the treatment of cancer and immune disorders.

The White Paper underscores a major shift in immunotherapy, moving beyond the established success of CAR-T cells in blood cancers to explore the unique capabilities of other immune cell types engineered with CARs. Each cell type - Natural Killer (NK) cells, invariant Natural Killer T (iNKT) cells, macrophages, regulatory T cells (Tregs), and gamma-delta ($\gamma\delta$) T cells - brings distinct advantages tailored to overcome specific therapeutic challenges:

"We are witnessing a transformative era in medicine where we can reprogram a patient's own immune system or utilize donor cells to fight disease with unprecedented specificity," said Dr. Tania Weiss, Ph.D., President & CEO of Marin Biologic Laboratories. "Our White Paper clearly demonstrates that the future of cell therapy lies not in a single approach, but in harnessing the diverse strengths of different immune cell types. By engineering NK cells, iNKT cells, macrophages, Tregs, and $\gamma\delta$ T cells with CAR technology, we are developing a powerful arsenal capable of tackling the limitations of current therapies- particularly for solid tumors, autoimmune conditions, and the need for safer, more accessible treatments. Marin Biologic is committed to being at the forefront of translating these cutting-edge scientific concepts into tangible clinical solutions that will fundamentally change patient outcomes."

Highlights from the White Paper

- CAR-NK Cells: Offer off-the-shelf cancer-fighting capability with reduced toxicity, showing

promise across both blood and solid tumors.

- CAR-iNKT Cells: Combine innate and adaptive immunity to eliminate tumors while minimizing immune rejection.
- CAR-Macrophages: Capable of entering solid tumors and reprogramming the tumor microenvironment to awaken immune responses.
- CAR-Treg Cells: Designed to suppress overactive immune responses, paving the way for new treatments for autoimmune and transplant-related conditions.
- CAR- $\gamma\delta$ T Cells: Merge speed and specificity, targeting a broader range of cancers with reduced side effects.

Collectively, these innovations mark a paradigm shift in the field of cell therapy, moving beyond one-size-fits-all solutions toward multi-platform immune engineering. Marin Biologic's analysis underscores the growing potential of cell-based therapeutics not only in oncology but also in inflammation, autoimmunity, and regenerative medicine.

"At Marin Biologic, our mission is to bridge scientific innovation with real-world therapeutic solutions," added Dr. Tania Weiss, Ph.D. "Through our partnerships in [cell-based assay development](#) and GMP bioanalysis, we are committed to accelerating the translation of these revolutionary therapies from the laboratory to the clinic."

About Marin Biologic Laboratories Inc.

Marin Biologic Laboratories (MarinBio) is a woman-owned contract research organization (CRO) with over 30 years of experience supporting the pharmaceutical and biotech sectors. Specializing in custom cell-based assays, GMP/GLP compliance, and regulatory strategy, MarinBio partners with clients to advance therapeutics from discovery to commercialization. With a team of senior PhD scientists and a flawless regulatory audit history, MarinBio provides the scientific expertise and quality systems necessary to meet global compliance standards.

Marin Biologic Laboratories is recognized for its scientific agility, rigorous quality systems, and deep understanding of FDA regulatory expectations. The company is known for working collaboratively with clients, ensuring each assay is customized to meet specific regulatory, technical, and commercial goals.

Operating from a GMP-compliant facility in Novato, CA, MarinBio supports US and international clients ranging from venture-backed startups to top-tier global biopharma firms. The company's service portfolio includes:

- Potency Assays/Lot Release
- Stability Testing
- PK/PD & Immunogenicity Studies ADA
- ELISA
- Flow Cytometry
- Cell-Based Assays
- Molecular Biology
- qPCR
- GMP

For the complete white paper or to discuss your bioanalytical assay development needs, please visit the MarinBio website. <https://www.marinbio.com/>

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