

CleverLab

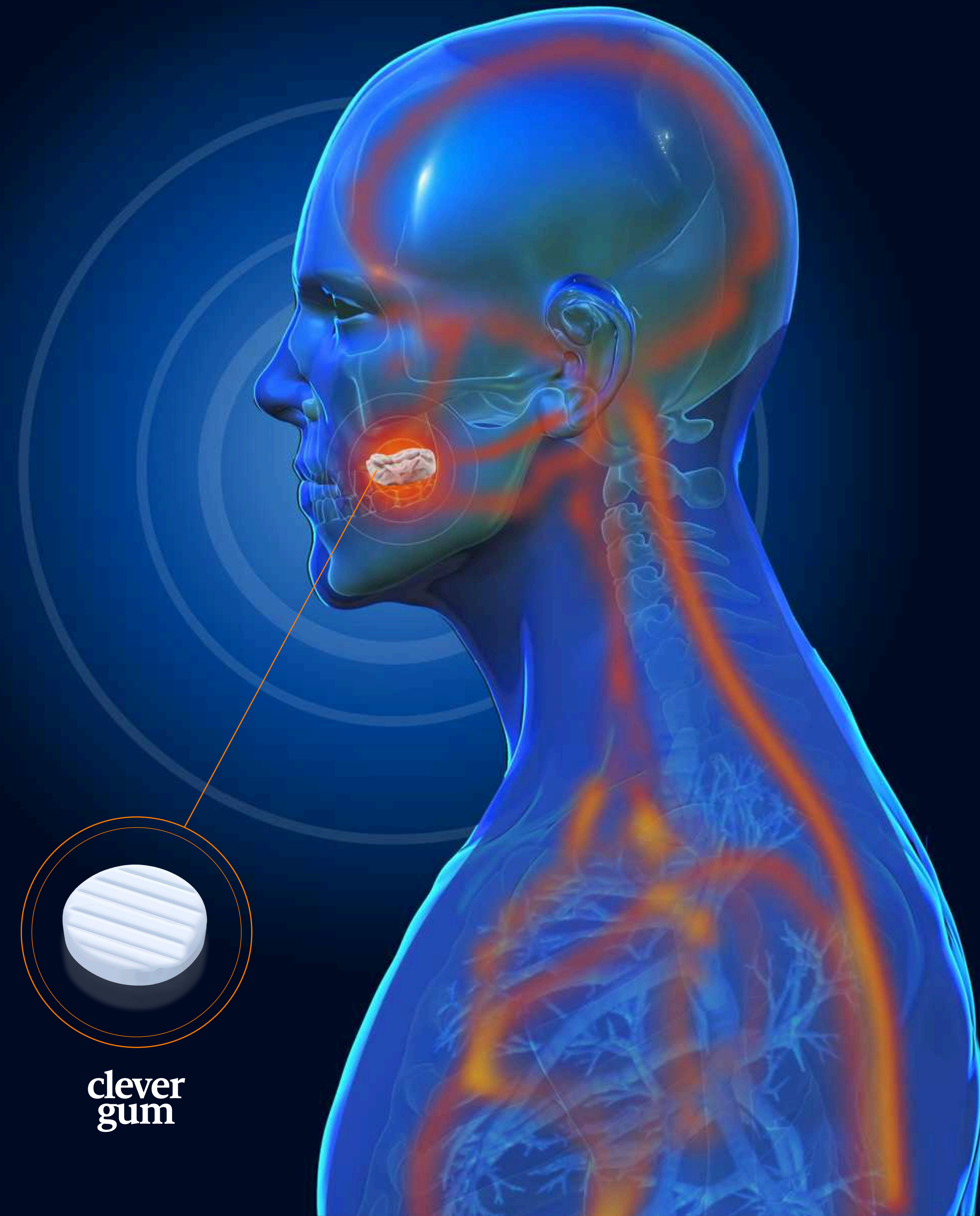
Cleverlab x Dr. Henry Daniell Cleverlab Oral Biologics™

Launching the world's first IND-ready platform for antiviral, anticancer, and immunomodulatory oral biologics.



Formulated with chloroplast-expressed therapeutics and anchored by click chemistry delivery.

Made In SWEDEN

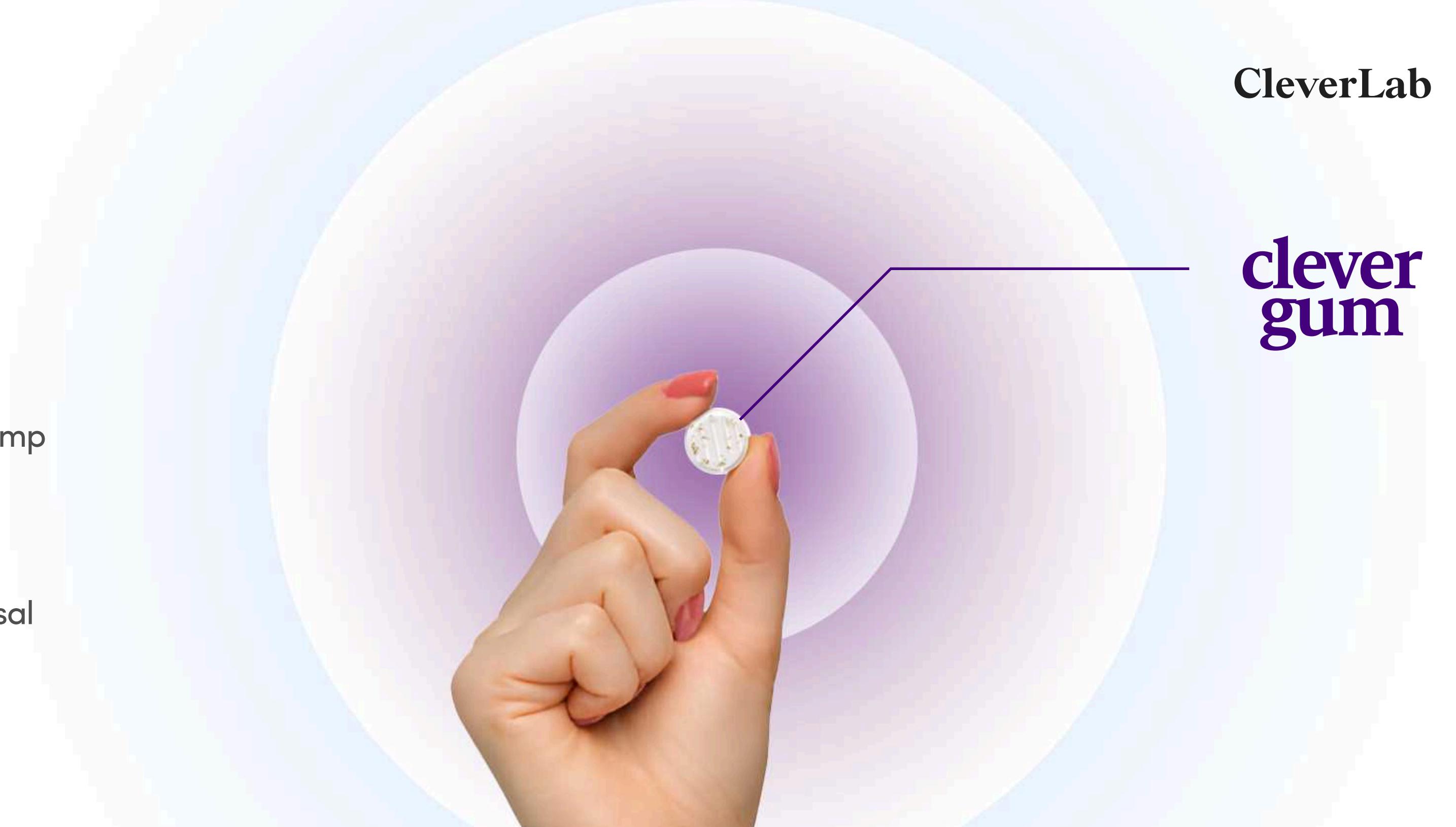


clever
gum

The Vision

- Shift the future of biologics from needle to mouth.
- Empower every pharmacy, clinic, and refugee zone with room-temp oral therapy.
- Begin with Neutralize™ the first antiviral chewing gum.
- Expand into oral cancer, fungal defense, autoimmune, and mucosal vaccine platforms.

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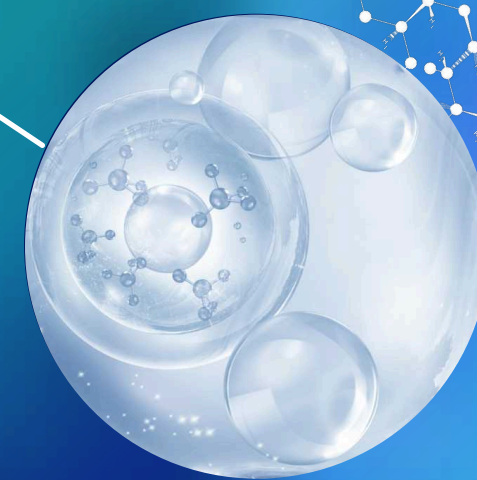


Why This Matters

CleverLab

- 90% of biologics today are injectables
- Oral delivery improves access, safety, adherence, and economics
- Dr. Daniell's IND-ready plant-expressed therapeutics are shelf-stable for 2+ years
- Clicktromics™ enables targeting, release control, and buccal mucosa absorption

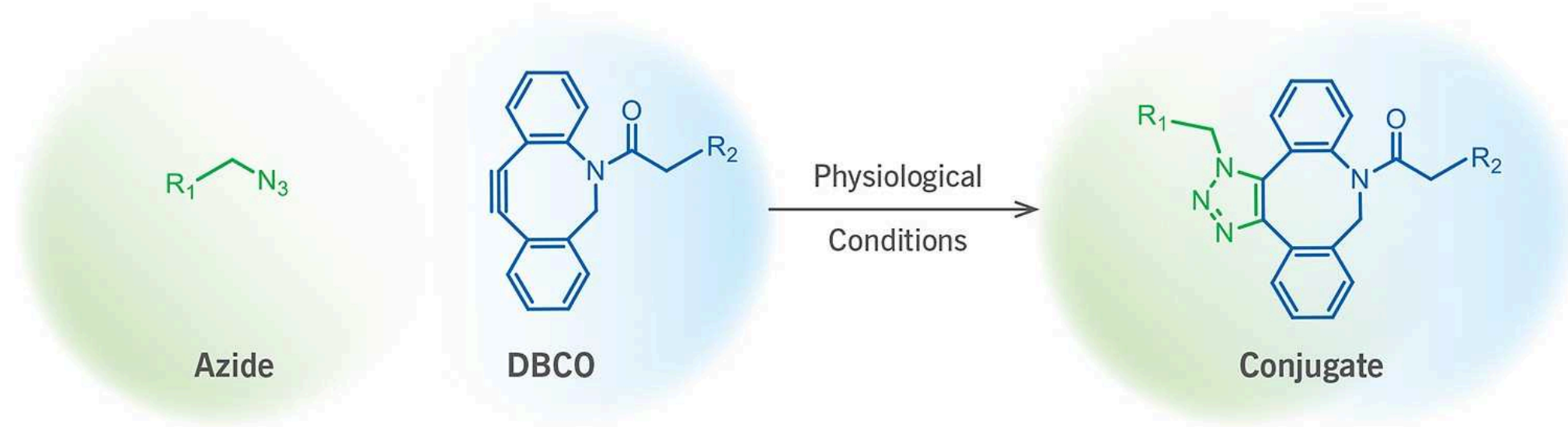
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Flagship Product: Neutralize™

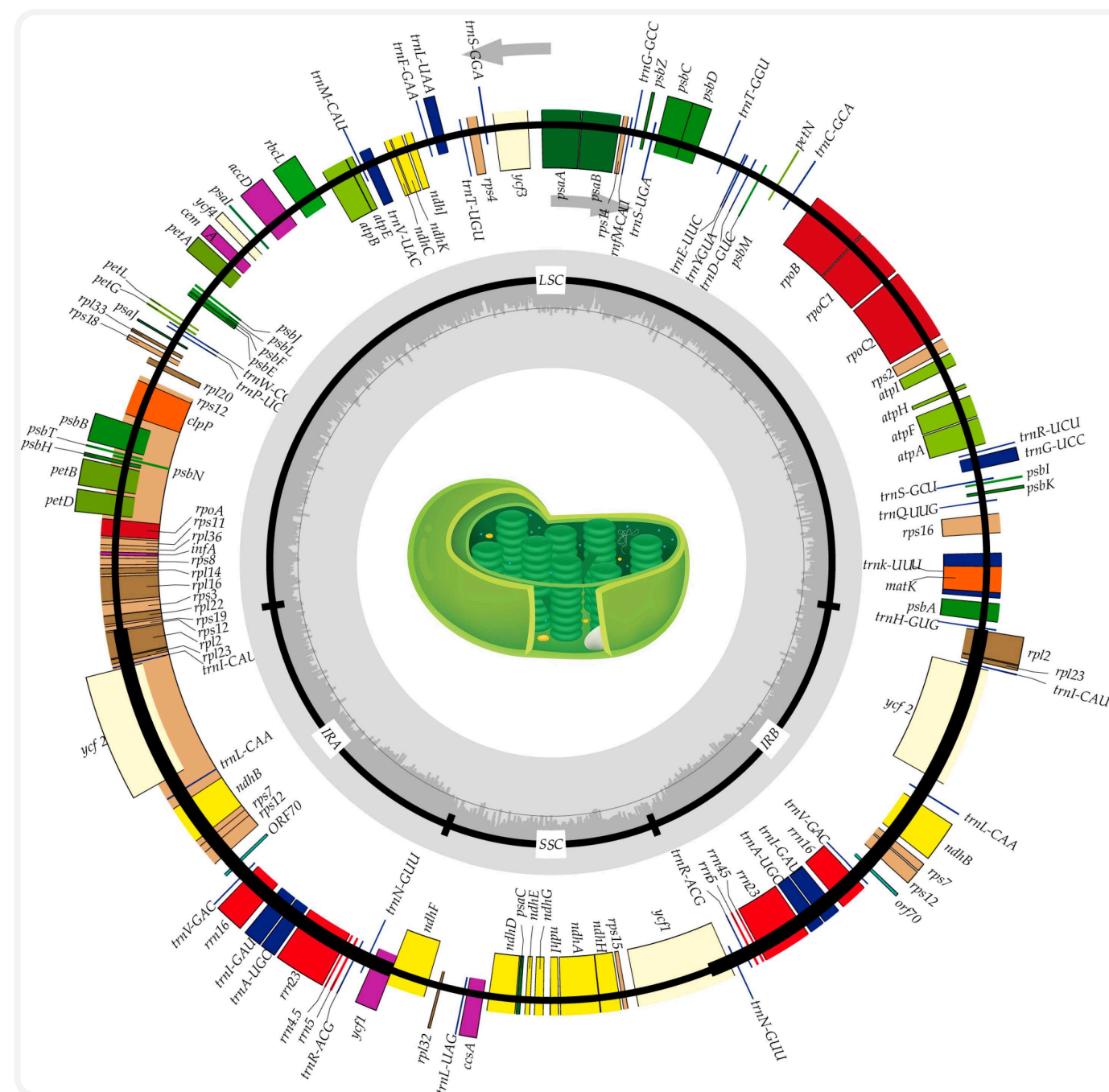
Antiviral Chewing Gum | IND #154897

- Active: FRIL (Flt3 Receptor Interacting Lectin)
- Neutralizes HSV-1/2, H1N1, H3N2 (95%+ in plaque assays)
- SPAAC click chemistry conjugation (Cleverlab)
- Mucoadhesive LNP matrix with controlled release confirmed by ART-5 chewing simulator
- IND-approved formulation. Fast Track eligible. OTC and Rx versions



Plant Biologics + Click Chemistry = Oral Therapeutics 2.0

- Chloroplast expression = no cold chain, stable leaf powder, high yield
- Clicktromics™ platform = precision anchoring using Nobel-winning SPAAC chemistry
- First-ever use of click-anchored biologics in a consumer gum
- 95% virus neutralization across multiple strains with ambient shelf life up to 2 years



Clicktromics™
Developed by Prepaire Labs Last update: Mar 12, 2025
The toolbox for clickchemistry

Clicktromics Components What's Clicktromics Bertozzi How it works Key Concepts Team behind Start Clicktromics →

Explanation Video
Clicktromics Components

Antibody Linker - Payload Target Cell
Antibody Drug Conjugate (ADC) Target Cell

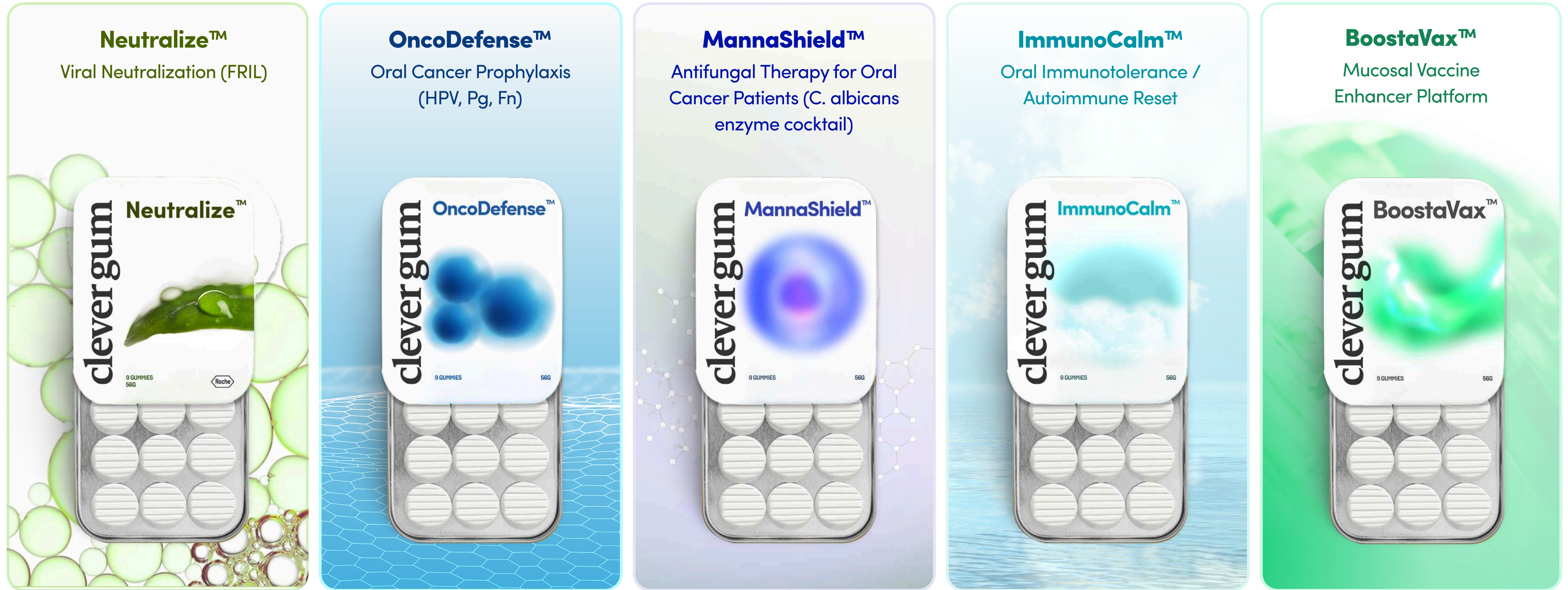
Pinatuzumab Vedotin Tumor cell
CD22 Endosome Lysosome Microtubule
MC-vcPAB linker Internalization Degradation Drug Release Cellular Machinery Disruption Cell Death

App Description
What's Clicktromics™?
Clicktromics is a specialized application developed by Prepaire Labs aimed at assisting scientists and researchers in the efficient design and development of antibody-drug conjugates (ADCs). By leveraging an in silico approach, Clicktromics streamlines the process of creating more accurate, stable, and effective ADC molecules. The app reduces the time and cost associated with ADC screening by guiding users through a systematic design process, ensuring that only the most promising ADC candidates are targeted.

Bertozzi
A Pioneering Scientist in Chemical Biology and Glycobiology
Carolyn Bertozzi is a groundbreaking scientist whose work has changed the way we understand and interact with living organisms at the chemical level. Her most famous achievement, the development of bioorthogonal chemistry, allows scientists to conduct chemical reactions inside living organisms without interfering with their natural processes. This breakthrough has opened up new possibilities in medicine, including better ways to diagnose and treat diseases.
One of her key discoveries, copper-free click chemistry, enables researchers to study and manipulate biological processes in real time without harming the organism. This has been especially important in the field of glycobiology, which focuses on the sugars (glycans) that cover cells and play crucial roles in health and disease.
Bertozzi's tools have allowed scientists to map and study these glycans in ways that were never possible before, leading to major advancements in cancer research, infectious disease treatment, and the development of new therapies. For example, her methods have been used to identify cancer biomarkers, create vaccines, and develop drugs that target specific disease-causing molecules.
The impact of her work is enormous—her discoveries are not only transforming the field of biochemistry but also hold the potential to save millions of lives by leading to more precise and effective treatments. It's no surprise that her contributions have earned her one of the highest honors in science: the Nobel Prize.
Through our Clicktromics™ app, we carry forward the legacy of Carolyn Bertozzi's work, providing innovative tools that continue to push the boundaries of what's possible in medicine and biochemistry.

Product Pipeline (Expanded)

Under the Cleverlab Oral Biologics™ Program

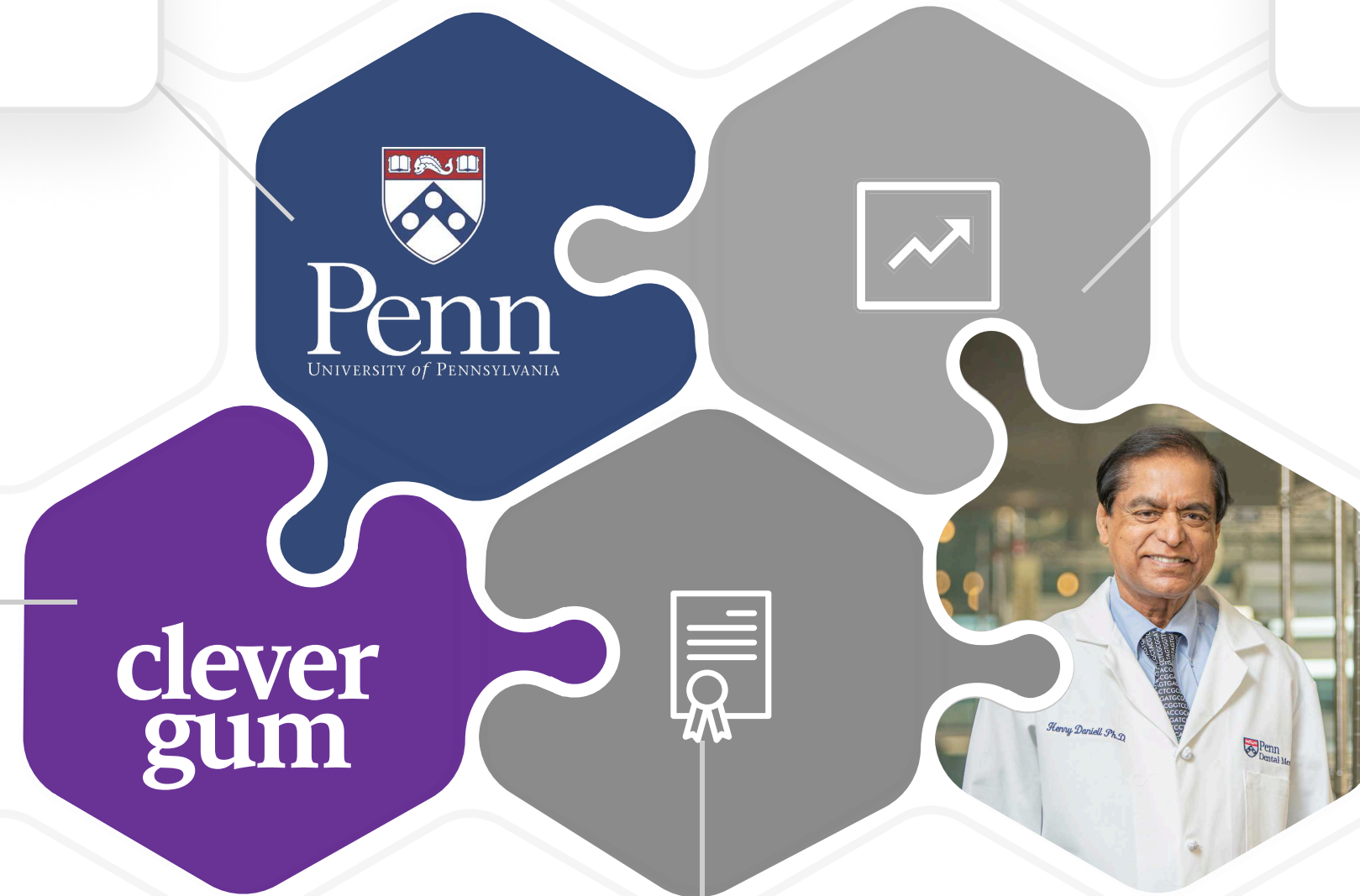


All IND-ready or clinically evaluated. Delivered orally. Designed to bypass injection bottlenecks.

Partnership Structure

JV-style agreement with Dr. Daniell or UPenn-affiliated entity

Up to \$5M USD committed by Cleverlab to fund clinical development



In return: exclusive commercialization rights under Clevergum/Cleverlab brands

Advisory board seat for Dr. Daniell

Co-patenting where relevant; publication rights retained



Production & Scalability

- API Source: Chloroplast-expressed proteins via UPenn's GMP plant-based platform
- Formulation: Click-conjugated nano-lipid gum base (Skyepharma enabled)
- Packaging: blister, stick, sachet formats
- Global distribution: clinical, consumer, NGO, government/defense



Clinical & Commercial Roadmap

Q2

Finalize JV + confirm 4–5 product candidates



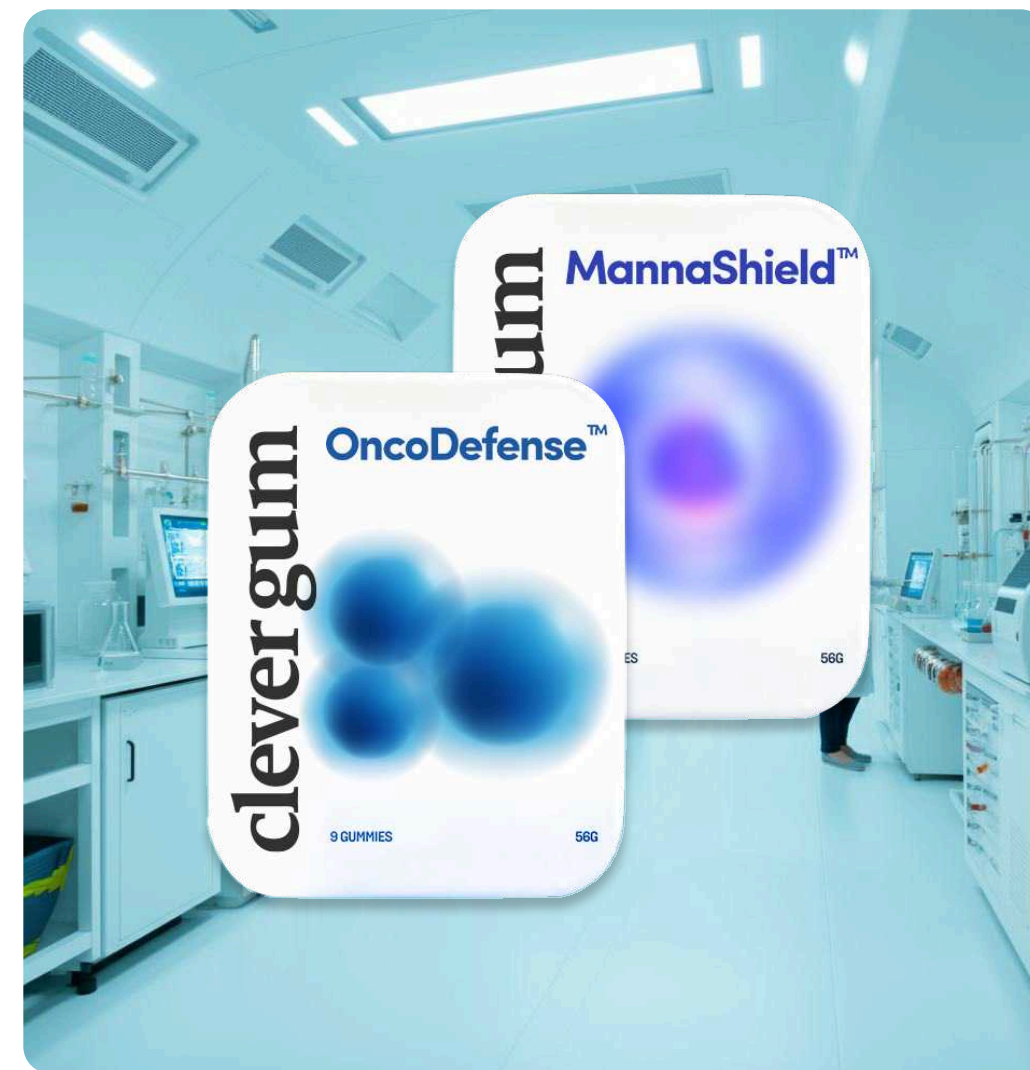
Q3

Launch Phase I/II clinicals for Neutralize™ (IRB-approved, IND-active)



Q4

Begin preclinical prep for OncoDefense™ and MannaShield™ programs



2026

Regulatory filings for OTC/Rx, partner rollouts, expansion planning



Access Terms

- Rights: Exclusive for 5 SKUs
- Royalties: Tiered structure TBD, fair market split
- Milestones: Clinical success triggers, launch bonuses
- Cleverlab retains branding and go-to-market discretion



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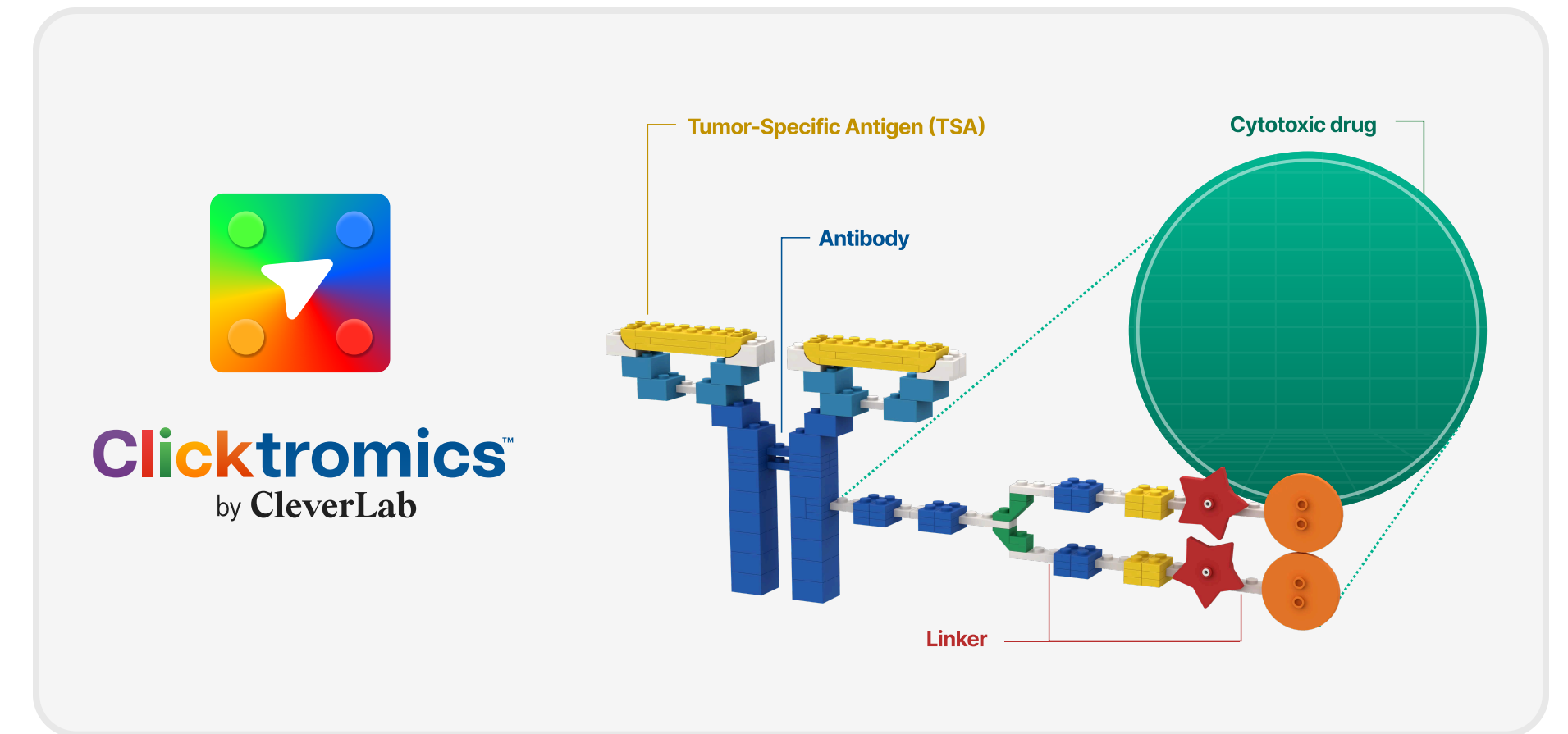
Science

4+ INDs. Proven. Peer-reviewed. Plant-based. Stable.



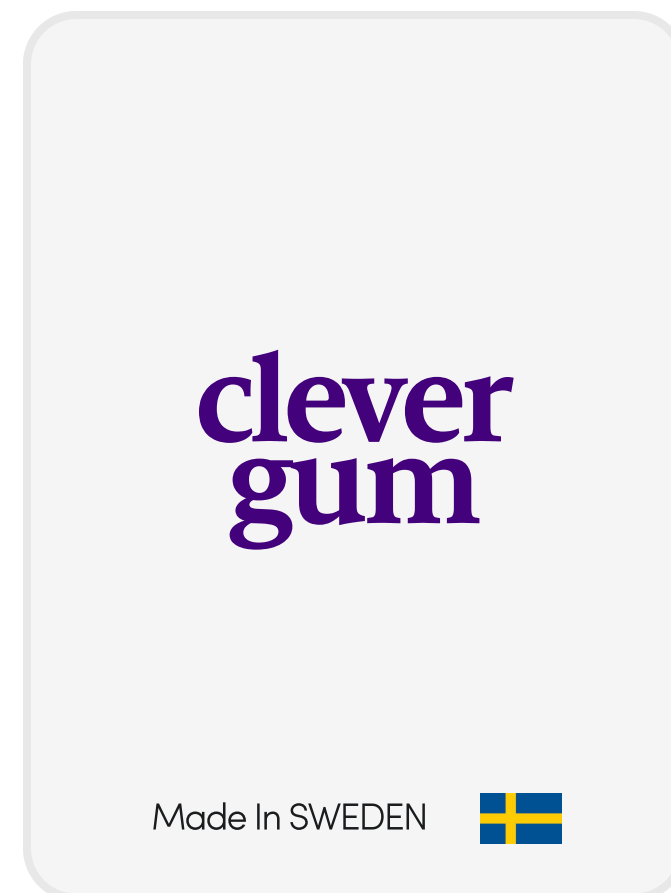
Platform

Clicktromics™ for delivery, targeting, release.



Commercial

Clevertgum brand. Consumer + pharma ready.



Culture

Mutual respect, future vision, patient-first.

