

# Palisades Therapeutics Secures USPTO Patent For AI-Supported Portable Modular Artificial Liver

*Revolutionizing Drug Development, Toxicity Screening, and Regenerative Medicine*

CLIFFSIDE PARK, NJ, UNITED STATES, February 20, 2025 /EINPresswire.com/ -- Pop Test Oncology LLC dba [Palisades Therapeutics](#) proudly announces that the United States [Patent](#) and Trademark Office (USPTO) has awarded

a patent for its Portable Modular Artificial Liver—a groundbreaking advancement in drug discovery, toxicity testing, and regenerative medicine. This AI-supported system is set to transform liver disease research and therapeutic development by providing an unprecedented human-relevant liver model.

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as someone who has worked in drug development for over 50 years, I believe the Portable Modular Artificial Liver developed by Palisades Therapeutics could revolutionize drug development.”

*Stephen Harris, PhD, FRSB,  
Fellow ATS*



Download patent from USPTO at this link:

<https://ppubs.uspto.gov/pubwebapp/authorize.html?redirect=print/pdfRedirectDownload/12227727>

## A Paradigm Shift in Drug Discovery

Metabolic Dysfunction-Associated Steatohepatitis (MASH), formerly known as non-alcoholic steatohepatitis (NASH), is a progressive liver disease with limited treatment options. Traditional drug testing relies on animal models that often fail to predict human outcomes. The Portable Modular Artificial Liver overcomes these challenges by accurately

replicating human liver function in a dynamic, AI-supported system.

Using advanced machine learning algorithms, this platform can analyze vast amounts of real-time data, detecting subtle molecular and cellular changes. Researchers can now:

- Induce disease states such as MASH by simulating high-fat and high-sugar environments.
- Assess drug efficacy with AI-supported insights into biochemical responses.
- Use living human hepatic tissue columns to accelerate drug candidate development, utilizing histological, immunohistological, and molecular markers.
- Identify human-specific biomarkers to accelerate precision medicine.
- Optimize therapeutic interventions by dynamically adjusting liver conditions.

## Bridging the Gap Between Preclinical and Clinical Success

With 90% of drugs failing in clinical trials, the need for more predictive preclinical models is urgent. Unlike artificial 3D tissue printing, our patented native decellularized liver scaffold retains essential signaling components like HGF, IGF-BP3, and GAG-proteins, creating a more authentic microenvironment for testing. AI integration enhances predictive modeling, reducing the time and cost of drug development while improving success rates.

Leading expert, Stephen Harris, PhD, FRSB, Fellow ATS states, “as someone who has worked in drug development for over 50 years, I believe the Portable Modular Artificial Liver developed by Palisades Therapeutics could revolutionize drug development. It would benefit drug development. It could accurately mimic human liver functions, allowing investigators to study drug metabolism, toxicity, and efficacy in a controlled environment. The technology would reduce dependence on animal testing, improve safety assessments, help identify potential liver toxicity effects earlier in the drug development process, and expedite the development of new treatments for liver-related diseases.”

## Unlocking the Future of Regenerative Medicine

Beyond drug discovery, the Portable Modular Artificial Liver paves the way for personalized bio-liver solutions, potentially offering alternatives to transplantation for patients with chronic liver conditions. The system also serves as a powerful research tool for understanding liver disease progression and developing next-generation treatments.

## Setting a New Standard in Drug Development

By eliminating the ethical and financial burdens of animal testing, this AI-supported platform

**(12) United States Patent**  
Altschul et al.

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(45) Date of Patent: **Feb. 18, 2025**

(54) **MEDICAL DEVICES AND USES THEREOF**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 865 days.

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**A61M 5/142** (2006.01)  
**A61B 5/00** (2006.01)  
(Continued)

(52) **U.S. CL.**  
CPC — **C12M 23/42** (2013.01); **A61B 5/14546** (2013.01); **A61B 5/4845** (2013.01); (Continued)

(58) **Field of Classification Search**  
CPC — **A61M 1/3486**; **A61M 1/3489**; **A61M 1/1601**; **A61M 1/1603**; **A61M 1/3623**; (Continued)

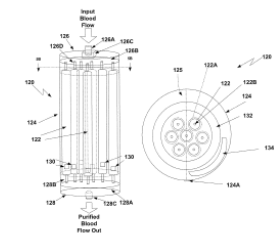
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(57) **ABSTRACT**  
The present invention provides for a method and apparatus for inserting and using dermal interstitial sensors in, for example, an analyte monitoring system, and for injecting active pharmaceutical ingredients, a bio-artificial organ device, and detection of a protein biomarker.

**4 Claims, 11 Drawing Sheets**  
Specification includes a Sequence Listing.



**US 12,227,727**

accelerates innovation in:

- Preclinical drug testing with superior accuracy in toxicity and efficacy assessments.
- Liver disease research, advancing treatment options for conditions like MASH and liver cancer.
- Regenerative medicine, exploring transplantable bioengineered liver solutions.

This USPTO patent marks a transformative leap in preclinical research, drug discovery, and organ transplantation, setting a new benchmark for predictive, ethical, and AI-enhanced medical innovation. Palisades Therapeutics is redefining the future—where drug discovery is faster, safer, and more effective.

“Columns to produce cures.”

Palisades Therapeutics invites industry leaders developing treatments for liver diseases, such as Bristol-Myers Squibb Company (NYSE: BMY); Gilead Sciences: GILD (NASDAQ); AbbVie: ABBV (NYSE); and Takeda Pharmaceutical Company Limited: TAK (NYSE) to explore this opportunity.

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