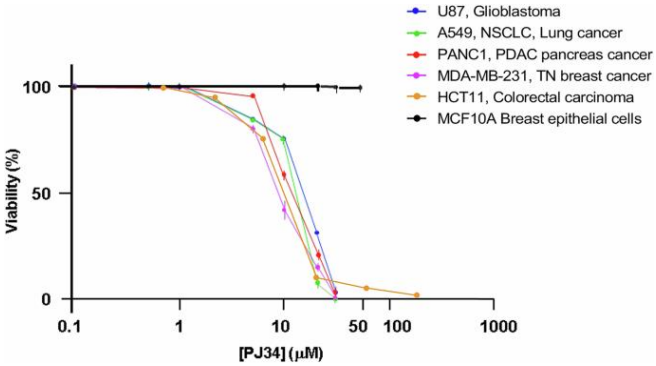
Phenancure: Precision Eradication of Cancer

Targeting the "Achilles' Heel" of Malignant Mitosis to Cure the Undruggable

Phenancure is a Tel Aviv-based, preclinical-stage drug discovery company pioneering a first-in-class therapeutic approach. We exclusively eradicate human epithelial cancer cells by inducing **Mitotic Catastrophe**, utilizing a mechanism that spares healthy cells—even those that are actively dividing. The lead molecule is PJ34. We search by AI methods more potent molecules eradicating cancer cells by the same mechanism.

PJ34 eradicates human malignant epithelial cells.



An exclusive eradication of the indicated human malignant epithelial cells, treated with PJ34 (96 h) at the indicated concentrations. Benign human epithelial cells are not impaired.

⚡ The Breakthrough: Selective Mitotic Catastrophe

While traditional chemotherapy indiscriminately attacks all dividing cells, Phenancure's platform targets a vulnerability unique to malignant mitosis.

- **The Target:** Post-translational modification of **NuMA** (Nuclear Mitotic Apparatus protein) in human cancer cells.
- **The Mechanism:** Our lead approach inhibits **Pim1 kinase** and **Tankyrase1**. These proteins are highly expressed in cancer but nearly absent in healthy somatic cells. The protein binding capacity of NuMA is dependent on NuMA phosphorylation and polyADP-ribosylation. In human cancer cells, NuMA is polyADP-ribosylated by tankyrase1 and is phosphorylated by pim1 kinase.

- **The Result:** Blocking both phosphorylation and polyADP-ribosylation of NuMA prevents the clustering of NuMA in the mitotic spindle poles, which destabilizes the spindle and prevents segregation and alignment of the duplicated chromosomes in the spindle mid-zone. Chromosomes dispersion activates the spindle assembly control (SAC) mechanism, which prevents the ubiquitination of cyclin-B, which prevents mitosis termination by stacking mitosis in the anaphase. This causes a rapid, caspase-independent cell death by turning the mitochondria membrane leaky to cytochrome-C (**Mitotic Catastrophe**). Thus, the more frequently cancer cells are multiplied the more rapidly they are eradicated.

🎯 Lead Indication: Pancreatic Cancer (PDAC)

We are currently focused on **Pancreatic Ductal Adenocarcinoma**, one of the most lethal and treatment-resistant malignancies.

- **The Crisis:** PDAC has a 5-year survival rate of only **~6%**, with median survival under one year.
- **The Gap:** Current "Standard of Care" (Gemcitabine/Folfirinox) carries extreme toxicity and limited efficacy.
- **The Phenancure Edge:** Our lead molecule, **PJ34**, has demonstrated the ability to eradicate **90-95% of human PANC1 cells** in mouse xenografts within just 14 days of treatment, with **zero observed toxicity** or weight loss in the host.

📈 Evidence & Pipeline

Phenancure’s science is validated by robust preclinical data and a protected IP portfolio.

Category	Status / Data Point
In-Vivo Efficacy	**90-95% reduction** in pancreatic cancer cells (PANC1 xenografts).
Safety Profile	No impairment of weight gain, behavior, or healthy tissue in mice.
Broad Potential	Success indicated in **Epithelial cancers, including Lung, Breast (Triple Negative), Colon, Liver, Skin and also Blood cancers.**
IP Portfolio	Granted US and EU patents covering exclusive cancer eradication via PJ34 and analogues.

Category	Status / Data Point
Recent Science	Published in *Cell Death & Disease* (2025). Read Paper

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The Team

Led by world-class experts in oncology, biochemistry and molecular biology.

- **Prof. Malka Cohen-Armon (Founder & CTO):** B.Sc. *Suma cum laude* in Chemistry, D.Sc. in Biophysics (Technion), led a Biochemistry research group at the Tel Aviv University School of Medicine.
- **Oncology Consultants:** Prof. Tamar Peretz (Hadassah), Prof. Shai Izraeli (Schneider Children's), and a specialized team of Ph.D. researchers from the Cohen-Armon and Izraeli labs.

The Investment Opportunity

Phenancure is seeking **$2M USD** in milestone-based funding to achieve clinical readiness.

Primary Objectives:

1. **Analogue Optimization:** Identifying new molecules that inhibit Tankyrase1 and Pim1 at higher potency than PJ34.
2. **Clinical Transition:** Finalizing PK/PD and safety profiles required for Phase 1 human trials.
3. **Formulation:** Enhancing oral bioavailability beyond the current 33.3% of PJ34.

"Phenancure is not just making cancer treatments better; we are making them smarter by harnessing the cell's own replication process to trigger its demise."