

Novel photosensitizer for PCI

A novel photosensitizing drug, PCI-002, is designed for use in photochemical internalization (PCI)-based cancer therapy. It aims to enhance the precision and efficacy of treatments by enabling targeted delivery of therapeutic agents into cancer cells. The drug is currently being developed for hepatocellular carcinoma, addressing a high unmet medical need. With promising proof-of-principle data, it is positioned as an innovative therapeutic option in the field of cancer treatment.

Business Opportunity

This licensing opportunity focuses on PCI-002, an innovative photosensitizing drug intended for photochemical internalization (PCI), a cutting-edge technology designed to enhance the delivery and effectiveness of cancer treatments. PCI-002 is tailored for hepatocellular carcinoma (HCC), a liver cancer with limited viable treatment options and one of the most rapidly growing incidence rates globally. With approximately 900,000 new cases of liver cancer diagnosed annually, and a projected market value exceeding \$5 billion by 2030, the unmet need for innovative therapies is significant. PCI-002 addresses this clinical gap by providing targeted and precise activation of therapeutic agents directly within cancer cells, reducing off-target effects and potentially improving treatment outcomes compared to existing therapies. This selective approach represents a competitive advantage over current standard treatments, which often suffer from poor specificity and significant side effects. The technology's commercialization strategy includes a primary focus on out-licensing to established players in oncology or photodynamic therapy markets, leveraging existing infrastructure and expertise for clinical development, manufacturing, and distribution. The photosensitizer space, although niche, has seen successful clinical implementation in oncology, signaling an opportunity for PCI-002 to follow a comparable pathway. The manufacturing process of PCI-002 has been strategically planned with experienced contract research organizations, ensuring readiness for scale-up and clinical use. The technology is supported by strong preliminary laboratory evidence and benefits from early validation through stakeholder engagement. It aligns with the growing demand for precision oncology solutions, promising a well-defined market entry strategy and commercial potential. Through licensing, PCI-002 offers a unique opportunity for companies seeking to address unmet needs in HCC and expand their portfolio with a targeted cancer therapy.

Technology Description

The presented technology is PCI-002, a novel photosensitizing compound designed for use in photochemical internalization (PCI), an advanced drug delivery technique. PCI-002 facilitates intracellular delivery of therapeutic molecules by enhancing their uptake specifically in targeted cells. The process is initiated by light activation of the photosensitizer after it accumulates in the desired tissues. Upon activation, PCI-002 triggers a localized photochemical reaction that destabilizes endosomal membranes, enabling the release of therapeutic agents directly into the cytosol of cancer cells. This targeted release avoids degradation of the therapeutic molecules in endosomes and increases their efficacy at the intended site of action. PCI-002 is being developed as a therapeutic solution for hepatocellular carcinoma (HCC), a challenging and

Category

Therapies/Small Molecules
Therapies/Other interventions

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poorly addressed cancer type. The key differentiator of this technology is its precision and reduced off-target effects compared to conventional cancer therapies, which often involve general cytotoxic agents that can harm healthy cells. PCI-002 integrates seamlessly with existing therapeutic modalities such as chemotherapy or immunotherapy by improving their intracellular delivery and effectiveness. As a product, PCI-002 will be administered alongside compatible therapeutics and delivered via light-mediated activation within the tumor site. This approach offers physicians a novel precision tool for treating cancers with greater control over drug localization. The technology represents a unique opportunity to enhance standard cancer treatment practices through targeted and localized drug activation, reducing systemic side effects and improving patient outcomes.

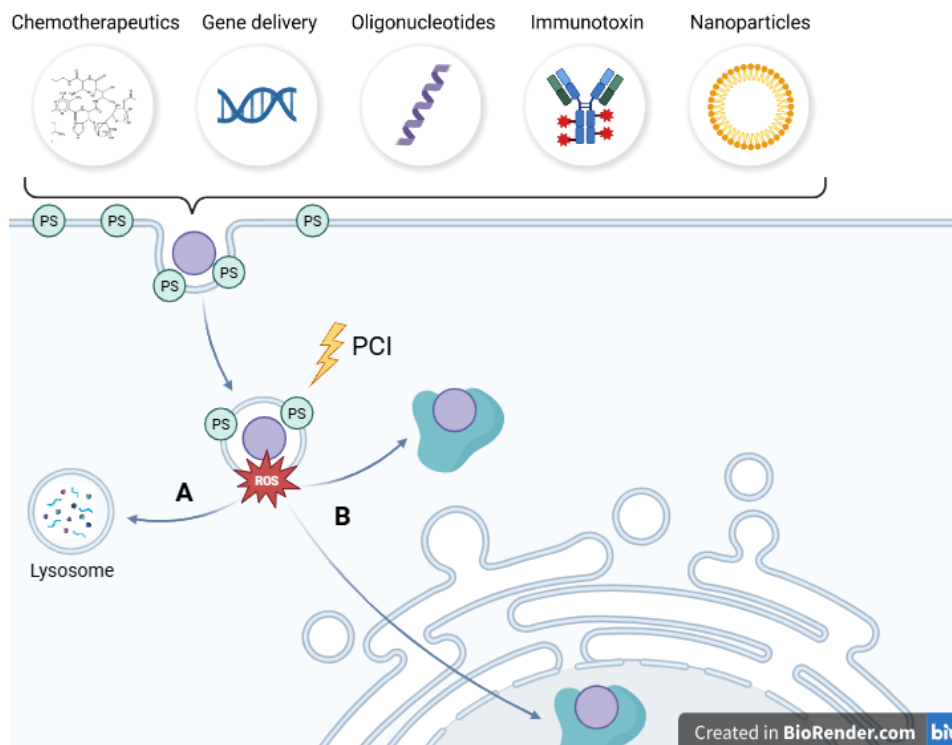


Fig. 1: The principle of Photochemical Internalization (PCI)

Intellectual Property

The intellectual property generated by the project includes a planned patent application for PCI-002, a novel photosensitizing compound, and its close structural analogues. The patent will aim to cover the composition of matter, methods of use, and potential therapeutic applications of PCI-002. The filing of the application is strategically planned to ensure robust enablement and maximize commercial value by supporting a broad scope of protection. Further patent prosecution is intended in major markets such as the United States and Europe, with potential extensions through the PCT system.

References

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