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Knightpoint Opens Strategic Discussions for the Mirai™ Next-Generation Capsule Inhaler Following US and European Patent Grants

Patented platform opens rather than pierces capsules—combining dose-form economics, formulation flexibility and a fundamentally simpler inhaler architecture

CARY, North Carolina — August 2026 — Knightpoint Group has strengthened the international intellectual-property position covering its Mirai™ next-generation capsule inhaler and is opening discussions with organizations interested in acquiring, licensing or accelerating the platform.

Mirai challenges a fundamental feature of conventional capsule inhalers.

Rather than piercing a capsule and relying upon it spinning or moving within a chamber, Mirai separates the capsule halves and directs airflow through and around them. The opened capsule becomes a controlled part of the aerosol pathway—not an object obstructing it.

This architecture is protected by recently granted patents in the United States and Europe. US Patent No. 12,667,677, European Patent No. EP4 288 132 B1 contains 28 claims covering key elements of the capsule-separation mechanism, airflow architecture and use of the separated capsule within the inhaler.

Taking the capsule to the next level

Capsules already provide Pharma with an economical, scalable and highly flexible way to manufacture, protect and transport individual powder doses. They can accommodate

established carrier-based formulations, engineered particles and a wide range of payloads. The capsule was never the problem. The limitation was how conventional inhalers treated it and how previous excipient knowledge driven by regulatory constraints initially inhibited formulation evolution.

Mirai retains the manufacturing advantages of the capsule while substantially upgrading its role in aerosol generation and delivery. Its passive architecture requires no propellant, electronics, metal piercing components, springs or multidose indexing mechanism.

It also separates dose manufacture from device manufacture.

Instead of incorporating every dose into a complex assembled inhaler, a company could manufacture capsule doses at pharmaceutical scale and use a comparatively simple device to deliver them.

Imagine producing millions of individually controlled complex doses each day—independently of the inhaler—rather than constraining dose output through the assembly of hundreds or thousands of complex devices containing those doses.

For appropriate products, Mirai therefore raises a larger strategic question:

Why invest in the capital, materials, supply chains and manufacturing complexity of a pMDI or multidose DPI if an economical capsule and a simpler next-generation device can meet the product and patient need?

Those established dose forms will remain appropriate for many products. Mirai creates another pathway—one that could materially change capital requirements, manufacturing economics, sourcing, formulation flexibility and lifecycle strategy.

Sustainability through simpler architecture

Mirai's sustainability proposition extends beyond avoiding pharmaceutical propellants.

pMDIs and complex multidose DPIs can require multiple materials, specialized filling and assembly operations and a complete device for each set of doses. Mirai separates the lifecycle of the medicine from that of the inhaler and creates the possibility of retaining or reusing the device while supplying capsule doses independently.

A product-specific lifecycle assessment will still be required before making quantitative environmental claims. Nevertheless, a passive, propellant-free and metal-free architecture provides a fundamentally simpler starting point.

The question is not only which propellant or material should replace another. It is how much device is required to deliver each dose in the first place.

Formulation and device evidence

Mirai has progressed beyond drawings and an unsupported design concept.

Knightpoint has developed a functional device engine and chassis incorporating its patented capsule-opening and airflow architecture. Independent in-vitro testing by Intertek, a globally recognized inhalation laboratory, has generated encouraging aerosol-performance profiles with budesonide and fluticasone propionate formulations approaching relevant marketed reference-product benchmarks.

Knightpoint has also undertaken early repurposing work involving ciclesonide for targeted delivery to the oesophagus, including its potential relevance to eosinophilic oesophagitis.

These programs are not being presented as independently validated commercial assets. They demonstrate how Knightpoint's formulation, aerosol and device expertise can be applied across established respiratory products and differentiated delivery opportunities.

Mirai cannot be considered as a device in isolation. The API and excipient properties, formulation, capsule, airflow, aerosol requirements and target product must be designed as an interconnected system. Our work with budesonide, fluticasone propionate and ciclesonide demonstrates both the technical foundation and the wider applicability of the platform.

— Andy Burgess, Chief Scientific Officer of Knightpoint Group

Beyond conventional respiratory products

Recent industry work involving capsule-based delivery of engineered formulations and GLP-1 analogs reinforces Knightpoint's central thesis: the capsule is highly relevant to the next generation of inhaled medicines.

But identifying the capsule as the right dose container is only the beginning.

The next question is whether the device merely punctures and moves that capsule—or makes the capsule an active, controlled part of the delivery architecture.

Potential applications for Mirai include established and differentiated respiratory products, inhaled antibiotics and antivirals, vaccines, engineered particles, peptides, proteins, selected biologics, GLP-1 therapies and other systemic or targeted-delivery opportunities. One particular advantage of the flexibility of the Mirai for selected biologics lies in its ability to deliver high payloads.

Each application would require molecule-specific development. Mirai has not undergone clinical evaluation or received regulatory approval.

The full commercial device has also not yet been completely tooled and industrialized. This creates a potentially attractive entry point: the core architecture is patented and supported by independent performance evidence, while a purchaser retains the ability to shape the final product and manufacturing pathway around its own portfolio.

Mirai changes the way the inhaler interacts with the capsule. By opening it and incorporating it into the airflow pathway, we believe we have created a fundamentally different foundation for capsule-based drug delivery.

— John Denny, founder and CEO of Knightpoint Group

The industry is investing heavily in lower-GWPP pMDIs, complex multidose DPIs and new capsule-based platforms. That activity validates the scale and importance of the opportunity.

But if the capsule is already economical, flexible and scalable, why continue treating it as an obstacle inside the inhaler—and why build every dose into a more complex device? Mirai asks companies to reconsider the complete delivery architecture, not merely improve one component of it.

— Russell Spencer, Chief Commercial Officer of Knightpoint Group

Knightpoint is inviting confidential discussions concerning acquisition of the platform and its intellectual property, licensing, application to existing molecules, regional or therapeutic rights, and strategic development.

The Knightpoint team can provide continuing technical, respiratory and commercial support if required, but continued involvement is not a condition of a transaction.

About Knightpoint Group

Knightpoint Group is a respiratory drug-delivery company developing the Mirai™ next-generation capsule inhaler. Knightpoint combines device engineering, formulation, aerosol science, CMC, industrialisation, supply-chain and commercial expertise.

Mirai is a development-stage platform and is not approved for commercial use.

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Interested in the Mirai™ platform?

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