SUCCESSFUL COMPLETION INDEPENDENT OPTIMATRIX PRECLINICAL EVALUATION

16 September 2026

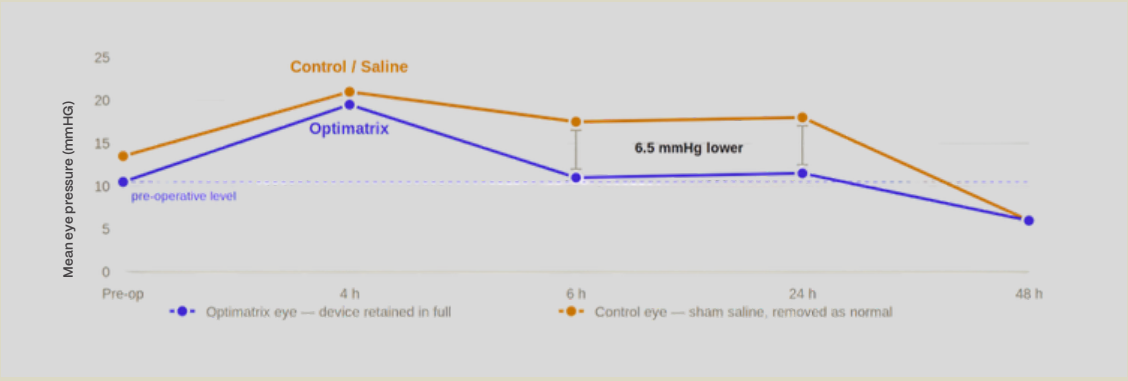
Tissue Spacing Franchise

HIGHLIGHTS

- **Successful completion of the first preclinical performance** study for Optimatrix in cataract surgery with a recognised animal model.
- TTX used the product **developed from our Tetramatrix™ platform polymer** to complete a cataract operation. To challenge its safety and performance, we did not wash it out – an essential and time-consuming step for every product currently on the market.
- The washing step is required because material left behind is the principal cause of a rise in intraocular eye pressure in the hours after surgery, **this is the most common early complication of cataract surgery.**
- With Optimatrix, even with 100% of the product remaining inside the eye, **pressure was back at pre-operative levels within 6 hours in the treated eyes and had not risen again by 48 hours.**
- **Optimatrix did what it was designed to do.** Optimatrix stayed in place, provided the spacing requirements and stayed completely clear throughout the operation, allowing the surgeon to complete the cataract operation quickly and efficiently.
- **Optimatrix is also simple to remove whenever the surgeon wants it out.** The gel is held together by the body's heat, irrigating the eye with cooled saline returns it to a liquid that washes straight out. No additional equipment, no time-consuming suction required, and a simpler surgical routine was enabled.
- Results are an early but **important step in our commercial pathway in ophthalmology. OVDs are used in almost every one of the over 20 million cataract operations performed worldwide each year, representing an addressable market of approximately US$3 billion.**

Dr Ali Fathi, Founder and CTO of TTX, said:

"Surgeons are forced by current OVDs to solve the same problem at the end of every case: remove the applied product completely or risk a spike in eye pressure for the patient. We set out to help surgeons reduce that risk. We asked the question "what if we did not need to spend so much time making sure every last trace of the OVD was removed for the patient's safety?". Our results show that with Optimatrix the eye settled back to where it started inside a day with zero product removed, reinforcing the safety profile of the entire Tetramatrix™ platform. I am excited to further investigate how the technology can help patients, simplify surgeries, and avoid the use of animal-derived products in its formulation."



Above: intraocular pressure before surgery and through to 48 hours afterwards; the dashed line marks the mean pre-operative level, and the brackets the gap between the two groups at 6 and 24 hours — 6.5 mmHg at both. Each animal received Optimatrix in one eye, left in full, and a sham balanced-salt procedure in the other, removed as normal. On these measurements the Optimatrix eyes settled more quietly than the sham eyes — the "biostealth" behaviour the platform is designed for.

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CONTEXT

Where is Optimatrix used?

There are over 20 million cataract operations performed worldwide each year. The clouded natural lens of the eye is broken up, removed and replaced with an artificial one. To do that safely, the surgeon needs the front chamber of the eye to stay open, deep and still. A chamber that collapses risks damaging the cornea and makes the operation far harder.

In almost every one of those operations, that is the job of an ophthalmic viscosurgical device (**OVD**). It is a clear gel, injected through the same small incision the instruments pass through, 2 to 3 mm, which fills the chamber, holds the tissue apart and coats the inside of the cornea while the lens is removed. At the end of the operation the applied OVD is washed and suctioned back out.

Why getting the product out of the eye matters?

The eye continuously makes fluid and drains it away through a filter at the edge of the front chamber. Every OVD on the market today must be actively washed and suctioned out at the end of the operation. Material left behind that causes inflammation in the chamber can block that filter, and is the principal cause of a rise in intraocular pressure in the hours after surgery – the most common early complication of cataract surgery.

This creates the central trade-off in the existing market. The devices that protect the eye best tend to be the hardest to remove again; the ones that come out cleanly tend to protect less. Surgeons choose between the two, or use both in the same operation.

What is Optimatrix and how does it work?

Optimatrix is the TTX ophthalmic viscosurgical device, formulated from our Tetramatrix™ proprietary polymer platform. Two new patents have been lodged and are currently in the PCT phase, covering the composition of matter and the use application for cataract surgery.

Optimatrix is:
- A fully synthetic, water-based solution;
- Delivered to surgeons as a liquid in a ready-to-use syringe;
- Injected into the front chamber of the eye through the cannula surgeons already use; and
- Transformed by the patient's own body heat into a clear, cohesive gel.

The Optimatrix gel:
- Holds the chamber open and stable through every step of the operation;
- Stays optically clear, so the surgeon's view is never compromised; and
- Is simple to remove whenever the surgeon wants it out — cooled saline returns it to a liquid, and it washes away.

Simplicity is the point. The same property that sets the gel also releases it, so removal is a change of temperature rather than a feat of technique by the surgeon.

Above: Optimatrix is a liquid in the syringe, sets to a gel at body temperature, and returns to a liquid when irrigated with cooled saline.

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Why it is important that Optimatrix is fully synthetic?

All viscosurgical devices on the market today are built from a naturally derived polysaccharide. There are three in use: **sodium hyaluronate**, sourced either from animal tissue or by bacterial fermentation; **chondroitin sulfate**, which is animal-derived, mainly from shark fins; and **hydroxypropyl methylcellulose**, a semi-synthetic material made from plant cellulose. None of them is a fully synthetic polymer.

Optimatrix is. It is a fully synthetic, water-based formulation built from our Tetramatrix™ platform, with no animal-derived or fermentation-derived input at any point. Three things follow from that:

- **Supply**. A synthetic polymer is manufactured to specification, batch after batch, without depending on animal tissue or a living fermentation process.
- **Consistency**. The properties that matter to a surgeon — clarity, viscosity, how firmly it holds and how readily it releases — are set by design rather than by biological variability.
- **Traceability**. Removing animal-derived inputs removes an entire category of sourcing and traceability questions from the regulatory file. These are also a known source of inflammatory and foreign body reaction which impact the safety profile of products.

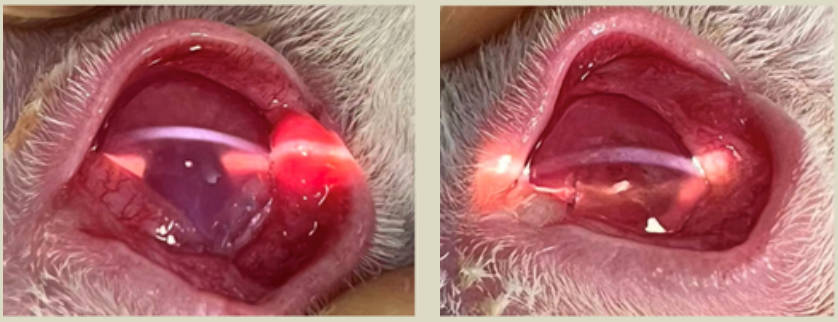
The commercial opportunity

Because every marketed device is built on one of those naturally derived polysaccharides, the surgeon manages the trade-off between protection and removability by choosing a product, or by using two. Optimatrix approaches the problem differently: the material is designed to hold firm at body temperature and release on cooling, so protection and removal are set by the operating surgeon rather than by the chemistry.

Key advantages:

- Fits seamlessly into existing clinical workflows;
- Requires no additional equipment or hospital infrastructure;
- Simple to use, and simple to remove; and
- Derived from our Tetramatrix™ platform polymer chemistry, which we already manufacture across our products.

What have we seen in the study and how do we measure success?



Above: the treatment sites 24 hours after surgery, with Optimatrix left in the eye and no irrigation or removal. The gel remained clear and visible at the site, and the pressure measurements showed the eye settling back to its pre-operative pressure within 6 hours — despite leaving 100% of the gel inside.

Animals underwent a cataract operation in both eyes, on the same day and by the same surgeon. In one eye Optimatrix was used and then left in place in full. In the other eye a sham procedure was performed using balanced salt solution, which was removed at the end of the operation as normal practice. Because both eyes of an animal are operated on together, each animal acts as its own control.

We measured the pressure inside each eye before surgery and at intervals through to 48 hours afterwards, and examined and photographed the eyes.

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In every animal, and as early as **6 hours after surgery**, pressure in the eyes treated with Optimatrix and left filled was lower than in the sham eyes. By **24 hours the Optimatrix eyes had returned to their pre-operative pressure** and sat well below the sham group, which was still elevated.

These results answer the first question any surgeon or commercial partner asks of a material that might be left behind: does the eye tolerate it. On this evidence it does — even at an artificial 100% retention.

Are we going to ask surgeons to leave the product inside?
No. We do not intend to change the way surgeons work — we intend to simplify it. Removing Optimatrix is straightforward: drop the temperature and it washes out. What this study adds is the confidence that if some product is left behind, it will not cause harm or drive up eye pressure. Patients are safe, and the surgeon can spend their attention on the steps of the operation that matter most.

What are the next technical and commercial steps?
We have engaged the FDA through our routine pre-submission strategy to confirm the Optimatrix product code and the preclinical studies required. The formal preclinical study is now underway. It follows the standard clinical approach, in which Optimatrix is removed at the end of the operation and compared side by side with the standard of care over 90 days to assess safety and local tissue response. This is the first step in our journey to complete clinical studies that support FDA approval of the product.

Consistent with our platform-to-product model, Optimatrix is intended for commercialisation through partnership. TTX generates the proof-of-concept and pilot data; the partner owns regulatory approval, reimbursement and market planning. The data described here forms part of the evidence package that supports our ongoing engagements with market leaders, which are now in full swing.

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For any questions regarding this announcement, to receive regular Tetratherix announcements & updates and to engage with management join the TTX Investor Hub or for more information visit:

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This announcement was authorised for ASX release by the CTO.

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