



HyProtect™ Antimicrobial Coating

HyProtect Prospective Veterinary Patient Report

This ongoing study has been developed to understand the potential improvement of the HyProtect antimicrobial coating for both the BioMedtrix TPLO Curve and MultiPurpose Bone Plate. All patients included in the study presented with ruptured cranial cruciate ligaments and were candidates for the TPLO procedure. The same plate and screw designs were used on all patients within each study, in addition to the same surgical technique and postoperative recovery regime. Assessment of patient condition was confirmed at a minimum of 8-12 weeks post-operatively. Owners were advised to contact the practice if any wound or implant issues arose before that time period. Further observations were made to verify that there were no complications or side effects from the coating.

Reported Results

As of February 2019, **seven-thousand three-hundred and forty-five (7,345)** surgeries have been completed with the HyProtect coated **BioMedtrix TPLO Curve**. Of these cases, **forty (40)** have reported *instances of infection*.

Two-thousand three-hundred and sixty-nine (2,369) surgeries have been completed with the HyProtect coated **BioMedtrix MultiPurpose Bone Plates (MPP)**. Of these cases, **twelve (12)** have reported *instances of infection*.

TABLE 1

# of Plates	# of Infections	Infection Rate
9,714	52	0.54%

Combined results from BioMedtrix's TPLO Curve and MPP

These combined 9,714 TPLO Curve and MultiPurpose Bone Plates account for 49% of the total 19,820 HyProtect coated bone plates in the field.

Of the forty (40) reported infections with the BioMedtrix TPLO Curve, thirteen (13) were reported to be surgical site infections (SSI), not periprosthetic in origin. Of the twelve (12) reported infections with the BioMedtrix MultiPurpose Bone Plates, two (2) were reported to be surgical site infections (SSI), not periprosthetic in origin.

These Surgical Site infections have been removed from the data in Table 2.

TABLE 2

# of Plates	# of Infections	Infection Rate
9,714	37	0.38%

Combined results from BioMedtrix's' TPLO Curve and MPP

0.38% Periprosthetic Infection Rate

Distribution

Of the ninety (90) total sites polled for data, fifty-six (56) sites responded, accounting for sixty-two percent (62%) of active users of the HyProtect Bone Plates. The *periprosthetic infection rate distribution* among these 56 responding sites is indicated in Table 3.

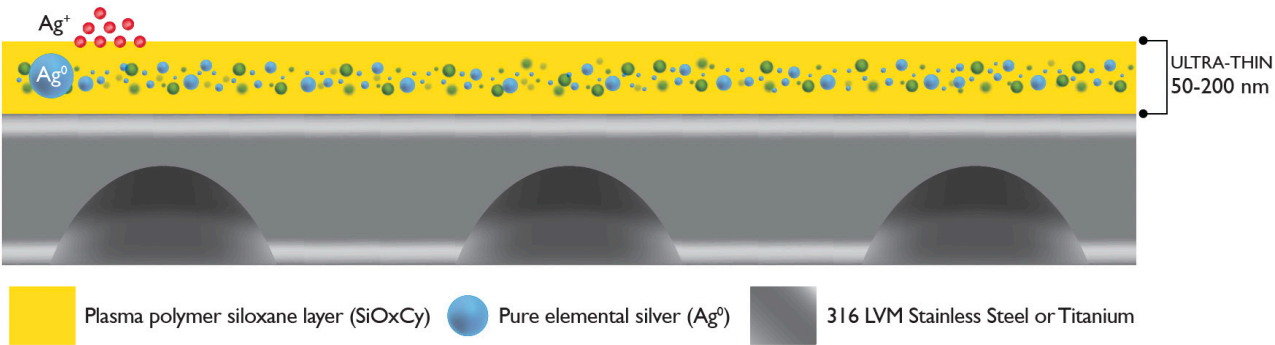
TABLE 3

Infection Rate	# of Sites	% of Sites
0%	46	82%
0-1%	3	5%
1-3%	5	9%
3%<	2	4%

Combined results from BioMedtrix's' TPLO Curve and MPP

HyProtect

HyProtect is a silver-based, biocompatible ultra-thin coating which helps prevent postoperative periprosthetic infection for at least 100 days. A continual release of silver ions breaks down life-supporting functions and halts reproduction capabilities of a wide range of bacteria.



MAGNIFIED FOR ILLUSTRATIVE PURPOSES

- Inhibits bacteria growth and biofilm formation on the surface of the implant for at least 100 days.
- Tested in vitro and in vivo in human and veterinary
- Biocompatible
- Combined physical vapor deposition (PVD) & chemical vapor deposition (CVD) process
- Ultra-thin coating (50 - 200 nm)
- Plasmapolymers with embedded silver particles

Efficacy

Global reports indicate that TPLO procedures are susceptible to infection rates as high as 14.3%, requiring the removal of the plate and screws in some cases. To evaluate the efficacy of the HyProtect coating in TPLO procedures, a pilot study* was conducted which polled infection rates in cases performed using HyProtect-coated BioMedtrix bone plates for TPLO procedures.

This study resulted in a clear reduction of infection rates in patients to only 0.38%.

Why Protect with HyProtect?

- **PEACE OF MIND** - Continuous diffusion of pure elemental silver ions with efficacy up to three months.
- **PROVEN** - Trusted in veterinary medicine for over three years, and 10 years in human medicine.
- **PRE-STERILIZED** - Save time and money in pre-op prepwork.
- **POWERFUL** - Harness the power of pure elemental silver to prevent bacterial colonization on implants.
- **PREVENTIVE** - Broad-spectrum efficacy against gram-positive, gram-negative and multi-resistant bacteria. Periprosthetic/implant infections are complications which can require revision surgery. The efficacy provided by the antimicrobial coating to address early infection can save the pet owner substantial money and potentially avoid the use of antibiotics and/or revision surgery.