PBC BioVet
Where Innovation Meets Care

Frequently Asked Questions

OssiVet® is a self-setting Calcium Phosphate-based bioadhesive bone substitute enhanced with phosphoserine. The unique components ensure OssiVet® provides adhesive and cohesive properties and is designed for veterinary orthopaedic use.

OssiVet® is a structural, mechanically enhanced osteoconductive bone adhesive suitable for reduction, provisional fixation, or void filling of bone fractures or defects in order to enhance structural stability where standard fixation alone cannot provide sufficient support.

F.A.Q.

Risk of Infection :What is the risk of infection of OssiVet® in arthroplasty or complex fracture situations?

No studies have been conducted to specifically assess infection rates associated with the use of OssiVet®. Based on available non-clinical *in vivo* studies and post-implantation observations, there have been no adverse tissue response and/or infections reported. Clinical judgment should be exercised, and standard infection control practices should be followed when using OssiVet® in arthroplasty or complex fracture procedures.

Effect on Hardening: How does OssiVet® perform in comparison to conventional bone cements when exposed to a wet environment?

Blood and saline environments do not inhibit the hardening of OssiVet®. The adhesive was explicitly designed to set in wet or fully immersed conditions, including contact with physiological fluids like blood. In fact, it demonstrates rapid setting and hardening properties even in wet environments, which is a distinguishing feature compared to many conventional bone cements. According to animal studies, OssiVet® remains cohesive and retains its adhesive properties during the initial setting, even under wet surgical conditions.

How does the degradation/resorption of OssiVet® affect the mechanical stability?

OssiVet® undergoes a controlled degradation/resorption process. Over time, the material is resorbed and replaced by new bone tissue without compromising mechanical integrity during healing phases.

OssiVet® in the Joint: What happens to remnants of OssiVet® that might escape into the joint?

OssiVet® does not set in synovial fluid, remnants that escape into the joint space after injection are unlikely to harden and will remain in a semi-liquid or gel-like state as observed during a bench test where OssiVet® was injected in synovial fluid. This potentially means that OssiVet® could either dissolve gradually or be resorbed by the body over time. Without contact with bone, OssiVet® would likely follow a different dissolving path affected from the surrounding body fluids, macrophages, or enzymes. However, no studies have been conducted to prove or investigate the dissolve/metabolic path of OssiVet® when in the joint space.

OssiVet®

F.A.Q.

What happens to OssiVet® in soft tissue?

OssiVet® does not induce bone formation in soft tissue, indicating it is not osteoinductive. A 28-day *in vivo* rat muscle implantation study confirmed the absence of ectopic bone formation. Histological evaluation showed no evidence of new bone formation or mineralization in the soft tissue environment. This supports its tissue-specific response, making it safe for use without triggering unintended bone growth in soft tissues. OssiVet® does not adhere on soft tissue surfaces which makes the removal easy using standard surgical techniques, such as irrigation, suction, or mechanical wiping. Excess material should be removed before wound closure and that the defect should not be overfilled.

Is OssiVet® radiopaque?

Yes, OssiVet® is radiopaque. OssiVet® exhibits sufficient radiopacity to be visible under standard clinical imaging (X-ray), meeting ISO standards for radiopacity for bone void fillers. Radiopacity is a critical property for intraoperative placement verification, postoperative assessment, and long-term monitoring of biomaterials used in osseous applications. OssiVet®'s radiopaque property supports accurate tracking of material placement and resorption over time, enhancing clinical decision-making and facilitating procedural safety. The radiopaque feature has no impact on its biocompatibility or adhesive performance and ensures compatibility with standard radiographic and CT imaging modalities used in orthopaedics.

Is the product osteoinductive in any way, or purely osteoconductive and adhesive?

OssiVet® is not osteoinductive, but it is osteoconductive and adhesive:
Osteoinductivity: *In vitro* and *in vivo* studies demonstrated that OssiVet® does not upregulate osteogenic gene expression or ALP activity compared to controls, nor does it induce ectopic bone in muscle tissue.
Osteoconductivity and Adhesion: OssiVet® exhibits excellent osteoconductive properties, supporting the attachment and proliferation of mesenchymal stem cells (MSCs), and acts as a bioadhesive. Its phosphoserine-modified calcium phosphate matrix allows strong bonding to bone and metal implants, even in wet environments, which is atypical for traditional bone cements.

How long does it take for the bone to remodel?

Remodelling of OssiVet® into natural bone occurs progressively over weeks to months: Histological data from animal models showed early signs of bone remodelling within 4 to 8 weeks.
Complete integration and remodelling timelines vary by defect size, host biology, and implantation site, but significant bone integration is typically observed by 13 to 26 weeks.
OssiVet® resorbs over time and is replaced by natural bone during the remodelling process.

F.A.Q.

How many 3.5 mm screw holes will one 3 cc kit fill?

In clinical use, not all of the “3 cc” ends up as usable paste due to handling. A 3 cc kit typically yields about 2.3–2.6 cc of effective fill.
For a 3.5 mm diameter × 30 mm hole (0.289cc), this works out to about 7–9 holes per kit .

How large a gap can one 3 cc kit fill between bone ends?

This depends mainly on the size of the bone surface between the two bone ends. With an effective paste volume of about 2.3–2.6 cc, a 3-cc kit can typically fill:

- A large gap: about 2.3–2.6 cm with a bone surface area of ~1 cm^2
- A moderate gap: about 1.1-1.3 cm with a bone surface area of ~2 cm^2
- A small gap: about 0.8-0.9 cm with a bone surface of ~3 cm^2

In simple terms: the smaller the bone surface area, the deeper the gap that one kit can fill. Conversely, with larger surfaces, the paste spreads out more thinly and fills a shallower gap.