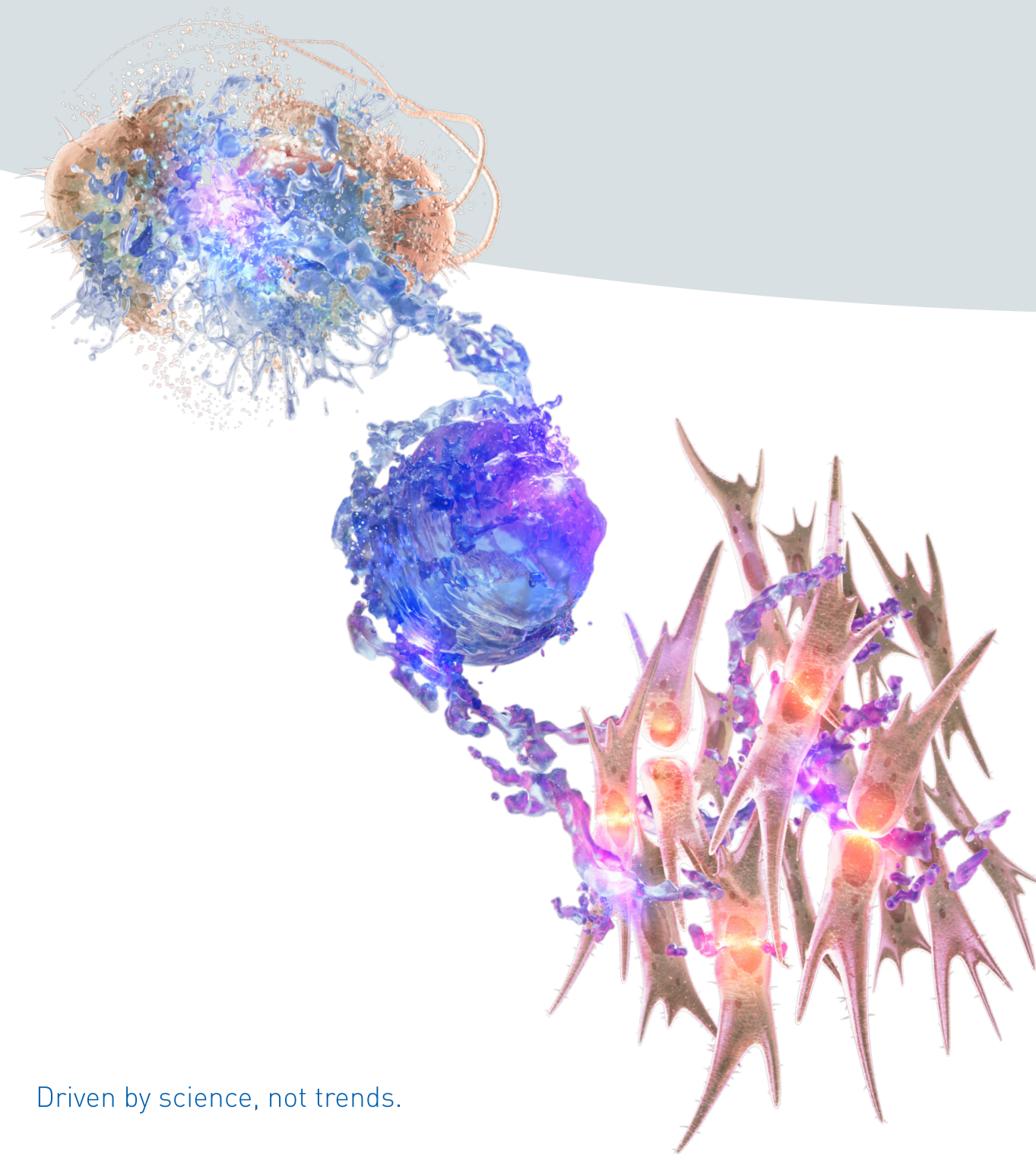
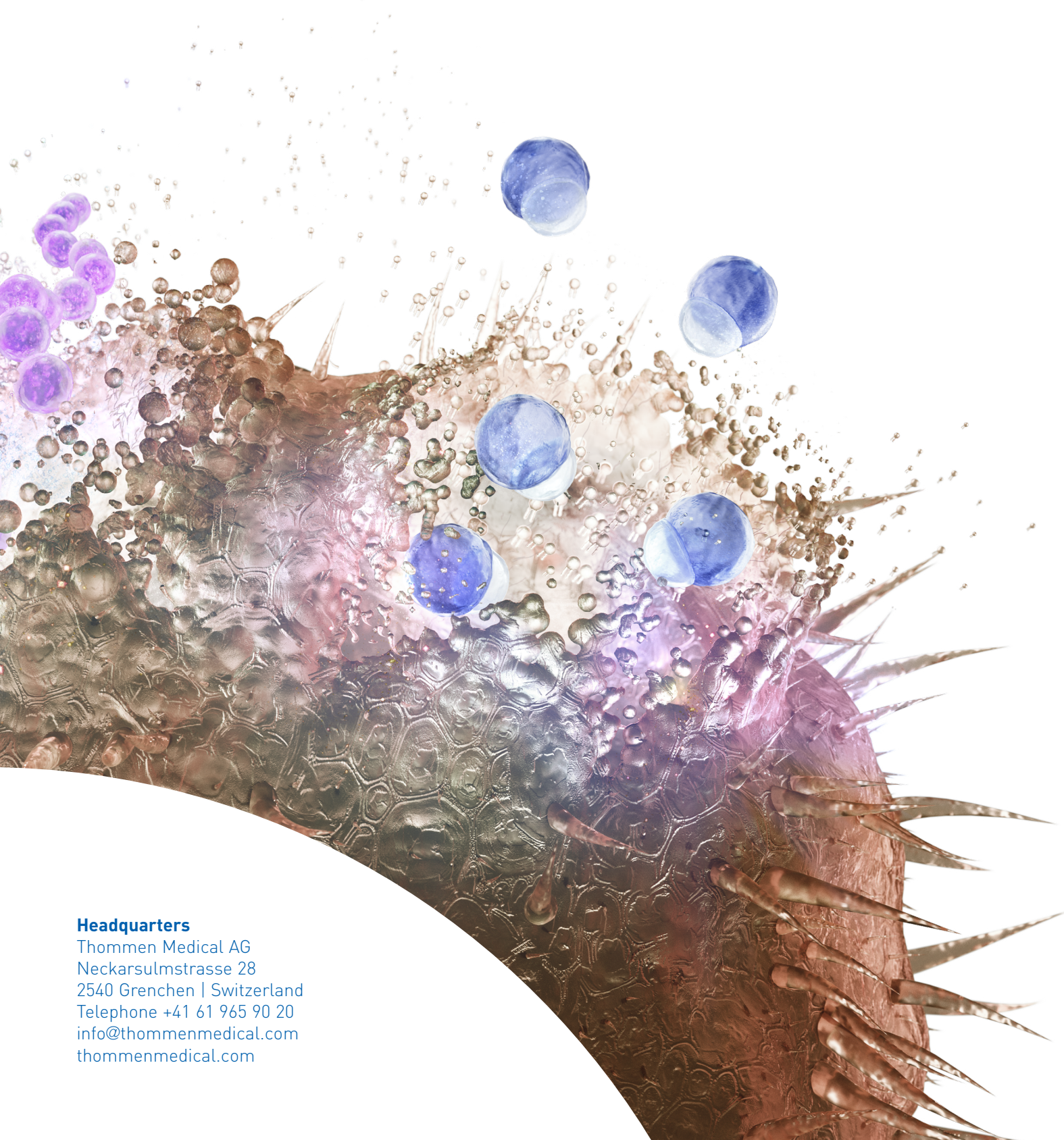


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1. Tugulu S et al. J Mater Sci Mater Med. 2010;21:2751–63; 2. Burkhardt MA et al. Sci Rep. 2016;6:21071; 3. Burkhardt MA et al. Biomater Sci. 2017;5:2009–23; 4. Hicklin SP et al. Int J Oral Maxillofac Implants. 2020;35:1013–20; 5. Molinero-Mourelle P et al. Clin Implant Dent Relat Res. 2024;26:704–13; 6. Makowiecki A et al. BMC Oral Health. 2019;19:79; 7. Le Gac O et al. Dent J [Basel]. 2015;3:15–23; 8. Trombelli L et al. Clin Oral Implants Res. 2024;35:1406–17; 9. Held U et al. Head Face Med. 2013;9:37; 10. Mohammadi Z et al. Int Endod J. 2011;44:697–730; 11. Tan J et al. ACS Appl Mater Interfaces. 2018;10:42018–29; 12. Galow AM et al. Biochem Biophys Rep. 2017;10:17–25; 13. Kruse CR et al. Wound Repair Regen. 2017;25:260–9; 14. Wang S et al. Bioact Mater. 2022;15:316–29; 15. Data on file; 16. Rippon MG et al. J Wound Care. 2023;32:5–20; 17. Hübner NO et al. Skin Pharmacol Physiol. 2010;23 Suppl:17–27; 18. Rosin M et al. J Clin Periodontol. 2001;28:1121–6; 19. Rohner E et al. Orthopedics. 2011;34:e664–8; 20. Grzybowski A et al. Ophtalmol Ther. 2025;14:2735–52; 21. Koburger T et al. J Antimicrob Chemother. 2010;65:1712–9; 22. Müller G, Kramer A, Journal of Antimicrobial Chemotherapy 2008;61:1281–7; 23. Fjeld H, Lingaas E. Tidsskr Nor Laegeforen. 2016; 136:707–11; 24. Roth C et al. Skin Pharmacol Physiol. 2010; 23:35–40; 25. Wyganowska-Swiatkowska M et al. Int Journ Mol Med. 2016;37:1594; 26. Liu J et al. J Bone Jt Infect. 2018; 3:165–172; 27. Pilloni A et al. Antibiotics [Basel] 2021;10:1192.

s0Ho Technology® plus

Antiseptic and Regenerative Properties
Combined in One Patented Technology



Headquarters

Thommen Medical AG
Neckarsulmstrasse 28
2540 Grenchen | Switzerland
Telephone +41 61 965 90 20
info@thommenmedical.com
thommenmedical.com

Driven by science, not trends.

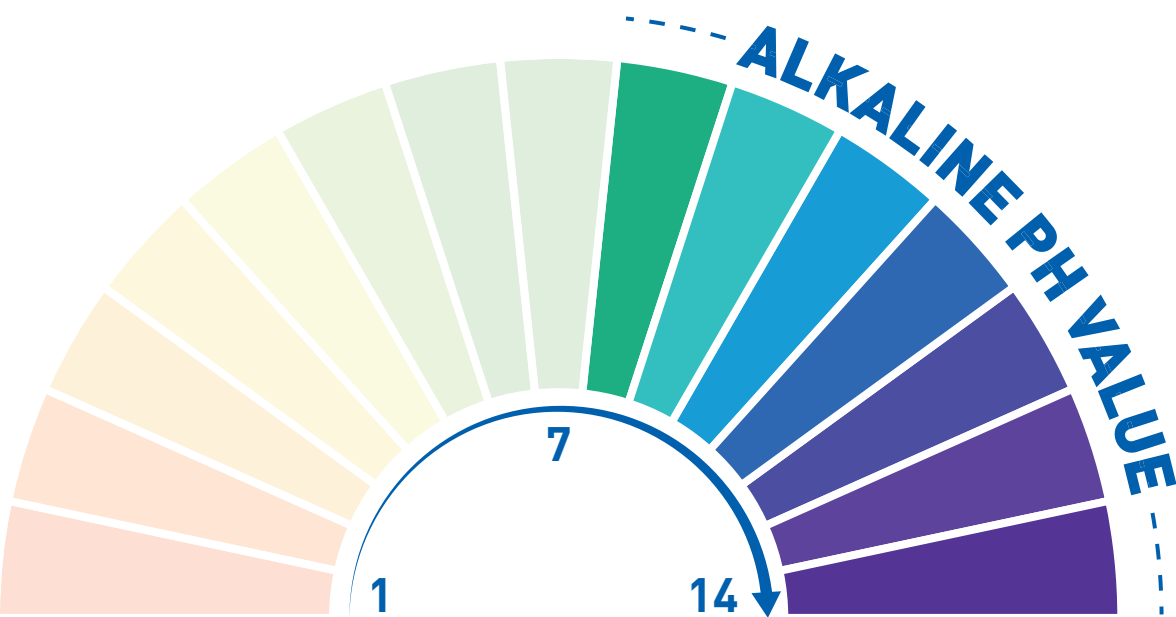
Rooted in Proven Implant Surface Technology

Thommen Medical introduced the clinically validated INICELL® surface in 2012 – a patented surface conditioning concept that redefined the standard for osseointegration.

The conditioned surface harnesses hydroxide ions (OH^- ions) to create a superhydrophilic environment, supporting protein adsorption and early blood clot formation *in vitro* – critical prerequisites for successful osseointegration.¹⁻³

Long-term clinical studies demonstrate strong clinical performance and very high success rates of up to 100% with the INICELL® surface.⁴⁻⁹ Significantly higher success rates have also been reported compared with both a conditioned competitor surface and the unconditioned Thommen Medical surface.⁶⁻⁷

This well-established surface chemistry forms the foundation of **sOHo Technology® plus.**



Hydroxide ions create an alkaline environment

Over
10 years of
experience
and long-term
clinical
validation

The Components of the sOHo Technology® plus

Hydroxide Ions

Well-documented antimicrobial and regenerative properties

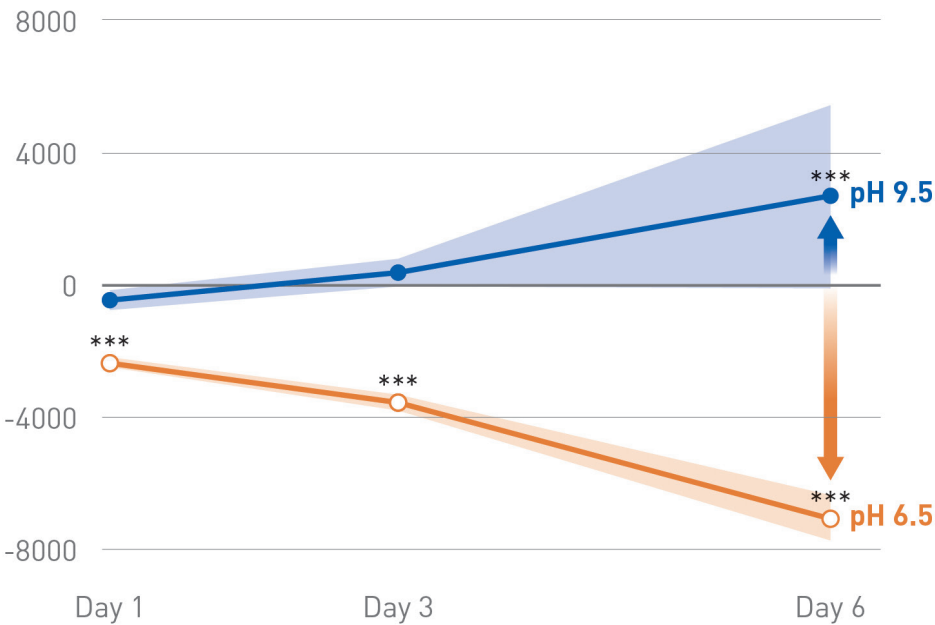
The antimicrobial properties of hydroxide ions are well documented.¹⁰⁻¹¹ Hydroxide ions generate an alkaline environment that damages microbial cell membranes and DNA.¹⁰⁻¹¹

Beyond their antimicrobial effects, hydroxide ions also exhibit regenerative properties, including enhanced metabolic activity as well as increased proliferation, differentiation, and migration *in vitro* across multiple cell types.^{11,12-15}

In contrast, acidic conditions have been shown to reduce cell growth.¹⁵ Wound closure may likewise be impaired over time in an acidic environment.¹³

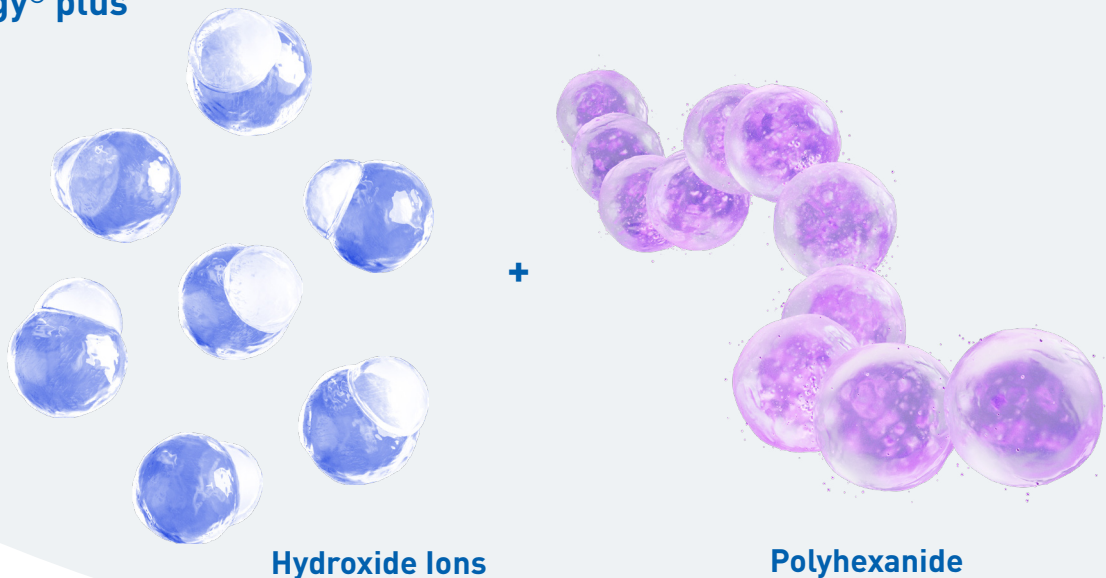
Metabolic activity of human gingival fibroblasts compared with neutral control

(Mean fluorescence intensity ± standard deviation)



Hydroxide ions in the surrounding environment are associated with increased metabolic activity — a marker for cell growth.¹⁵

sOHo Technology® plus



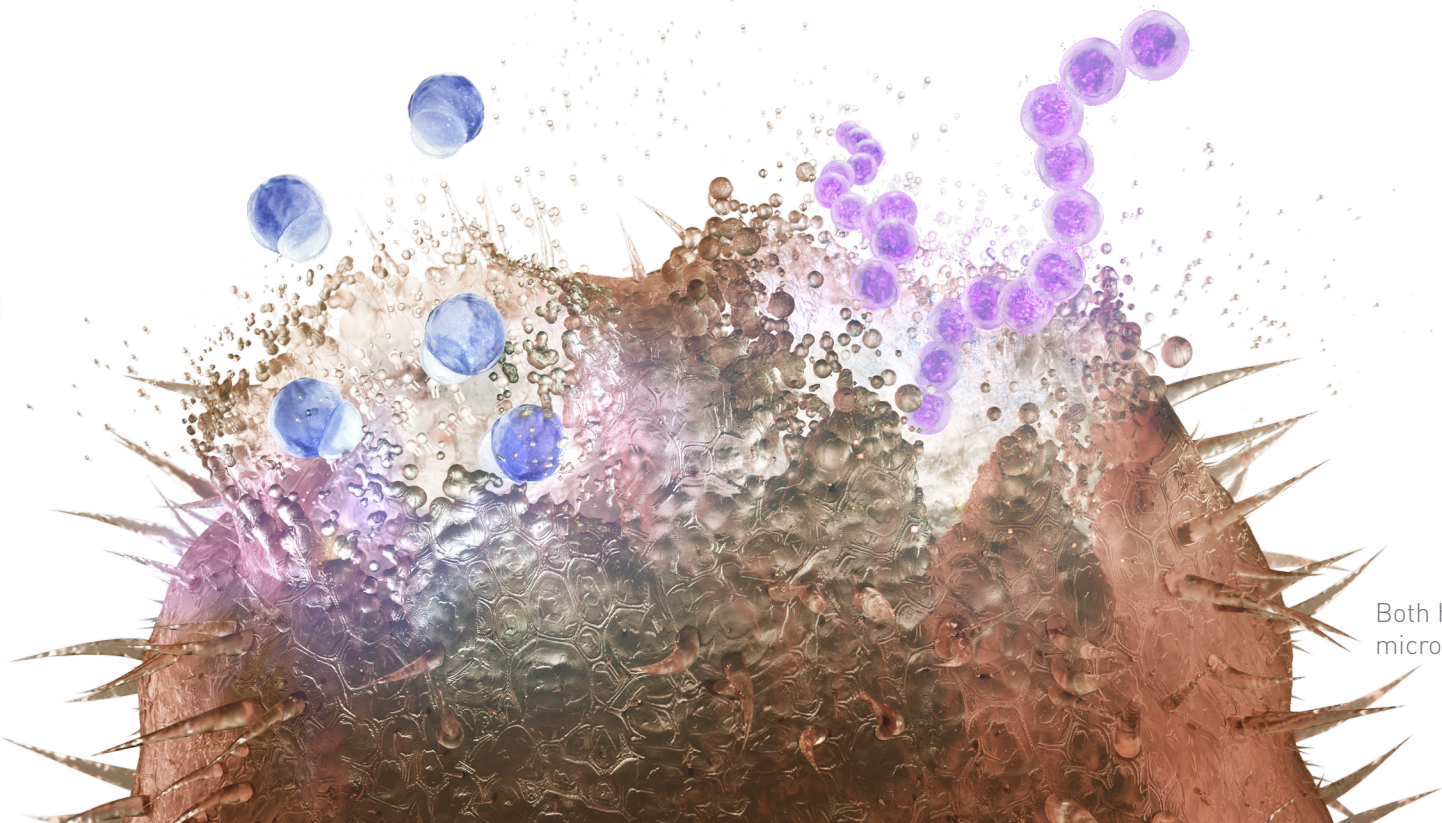
Polyhexanide

Established broad-spectrum antiseptic with high cell tolerability

Polyhexanide (polyaminopropyl biguanide, PHMB) is a well-established antiseptic widely used in orthopedics and traumatology, wound care, and ophthalmology.¹⁶⁻²⁰ It provides broad-spectrum antimicrobial activity against bacteria, fungi, and certain viruses.^{17,21-22}

Polyhexanide is characterized by high cell tolerability due to its selective interaction with negatively charged microbial membranes.¹⁷ This interaction also contributes to sustained antimicrobial activity over time, while no clinically relevant resistance development has been reported to date.^{17,23}

At low concentrations *in vitro*, polyhexanide has additionally been observed to support tissue regeneration.^{17,24}



Both hydroxide ions and polyhexanide damage microbial membranes.

sOHo Technology® plus: Antiseptic and Regenerative Properties Combined

While conventional antiseptics often present a trade-off between antimicrobial efficacy and cell compatibility,²⁵⁻²⁷ sOHo Technology® plus overcomes this limitation through a patented combination of antiseptic and regenerative properties.¹⁵

Pronounced antimicrobial properties

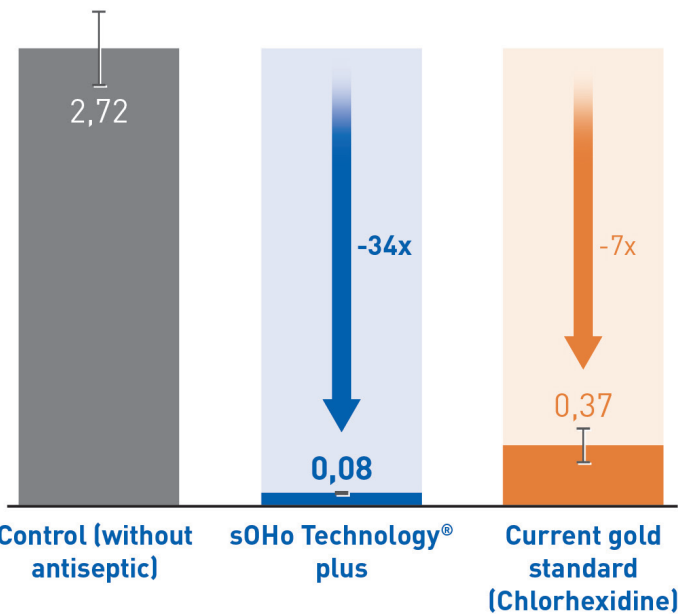
Hydroxide ions and polyhexanide both possess well-documented antimicrobial properties.^{10-11,17,21-22} In combination, they demonstrate pronounced antimicrobial activity even at low polyhexanide concentrations.¹⁵

This is reflected in a significant reduction in biofilm formation and bacterial load compared with conventional antiseptics or polyhexanide alone.¹⁵

As a result, low concentrations of polyhexanide are sufficient, promoting a cell-compatible environment and conditions favorable for tissue regeneration.¹⁵

Biofilm formation on a titanium surface

(Optical density at 590 nm)



Significant reduction in biofilm formation with sOHo Technology® plus compared with no antiseptic treatment and conventional antiseptic treatment.¹⁵

Support of cellular regeneration

By combining cell-compatible polyhexanide¹⁷ with the regenerative effects of hydroxide ions,¹¹⁻¹⁵ the sOHo Technology® plus preserves cell viability and supports conditions favorable for cellular regeneration.¹⁵

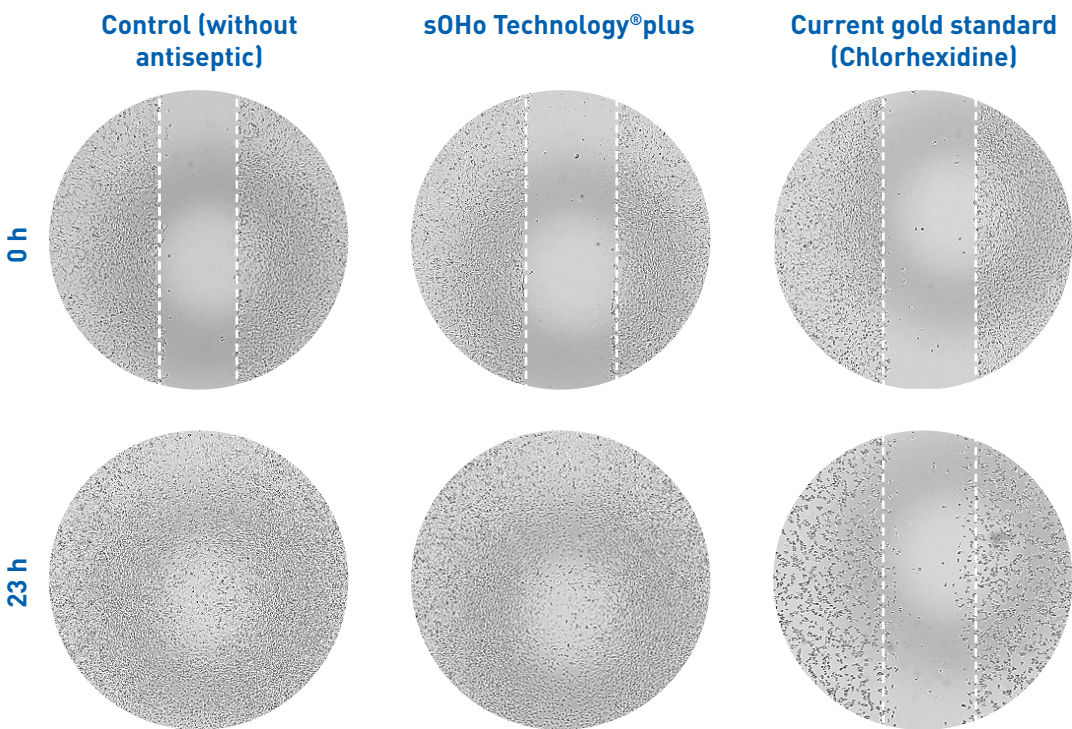
While chlorhexidine has been shown to inhibit cell growth and induce cell death across various cell types,²⁵⁻²⁷ studies with polyhexanide^{17,21} and the sOHo Technology® plus¹⁵ demonstrate high cell viability and low cytotoxicity.

Cell viability in human gingival fibroblasts



Following *in vitro* exposure to the sOHo Technology® plus, regrowing fibroblasts show no visible signs of cellular stress or cell death (30-second exposure, image captured after 1 day).¹⁵

Cell migration of human gingival fibroblasts



In a standardized *in vitro* cell migration assay – an established model in which a simulated wound is created (see gap) – cells treated with sOHo Technology® plus demonstrated pronounced migratory activity.¹⁵

Innovative
patented
technology