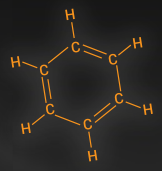
Bio-C® Temp

Bioceramic paste for intracanal dressing

angelus®

3 Reasons to use BIO-C® TEMP



1 Gradual release of Ca^{2+}

Periodic exchange is not required

2 Biocompatible

Absence of symptomatology

3 High alkalinity (pH ~12)

Unsuitable environment
for bacterial growth

New product!

High performance in **fewer sessions!**

BIO-C® TEMP

Bioceramic paste for intracanal dressing

Merely illustrative images.

INDICATIONS

- Intracanal dressing in endodontic treatment of teeth with pulp necrosis and retreatments.
- Intracanal dressing in cases of perforations, external and internal resorptions, prior to the use of BIO-C® REPAIR, MTA REPAIR HP and MTA ANGELUS®.
- Intracanal dressing for cases of incomplete rhizogenesis.

Definition

BIO-C® TEMP is an intracanal bioceramic medication. It has a great advantage over Calcium Hydroxide pastes because it has **low solubility** and, therefore, allows the product to stay in contact with the canal walls for a long period of time. As a result, a **high release of hydroxyl ions (OH^-)** is obtained in a continuous and gradual way.
Available in a syringe and applicator tips specially developed for the product, allowing the complete filling of the conduit. The applicator tips are pre-curved with an adequate length, facilitating application in areas with difficult access.

- Biocompatible
- High alkalinity
- High radiopacity
- Easy removal

Key Features and Benefits

pH

The main components of BIO-C® TEMP are Calcium Silicates which, after being hydrated, produce Calcium Hydroxide that dissociates into Ca2+ and OH-. Rleased Hydroxyl ions (OH-) are responsible for a significant increase in the pH of the surrounding tissues, making the environment unsuitable for bacterial growth. In the comparative study below, we can conclude that the BIO-C® TEMP, in addition to having the highest pH values, maintained its basic capacity increased over the period.

Groups	1 day	2 days	3 days	7 days	14 days	21 days	28 days	30 days
BIO-C® Temp	9.34 (0.40)A	10.84 (0.94)A	11.42 (0.55)A	12.45 (0.12)A	12.89 (1.02)A	12.65 (0.58)A	12.82A (1.17)	13.11A (1.23)
Ultracal XS	8.54 (0.23)B	8.98 (0.44)B	9.35 (0.24)B	10.43 (0.21)B	10.54 (0.88)B	10.21 (0.93)B	10.15B (0.97)	10.28 (1.41)B
MetaPaste	9.69 (0.12)A	9.91 (1.12)C	10.12 (0.56)B	11.26 (0.16)B	11.65 (0.98)C	12.78 (1,01)A	11.55 (0.34)C	11.69 (0.32)C

USP-Ribeirão Preto

Release of Calcium ions

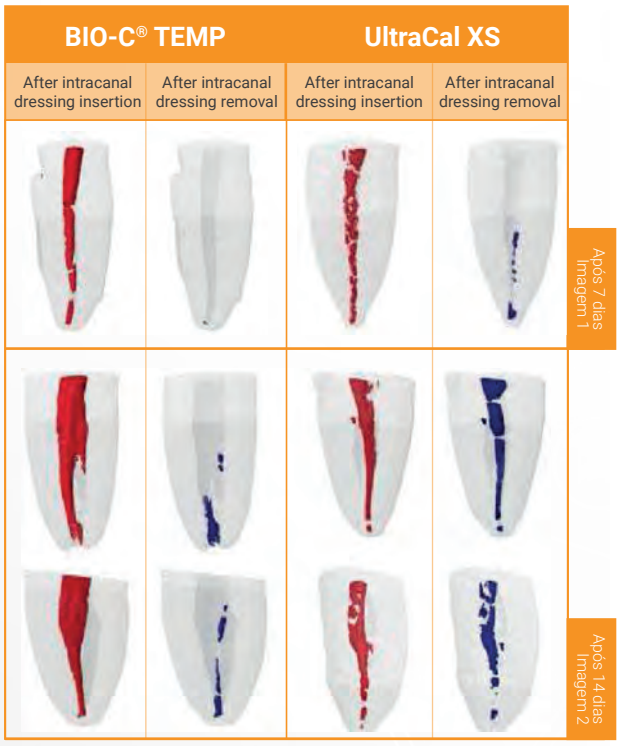
The release of $Ca2^{+}$ ions is essential for the biological and chemical action of an intracanal dressing. BIO-C® TEMP presents a constant release of $Ca2^{+}$ ions to the tissues, being biocompatible, not causing irritation and painful symptoms. The table below shows the highest ionic release potential between day 1 and day 30 for the BIO-C® TEMP intracanal dressing group, confirming this very important characteristic for an intracanal dressing.

RELEASE OF CALCIUM IONS		
Groups	**1 day**	**30 days**
BIO-C® Temp	-124.4	-320.7
Ultracal XS	-235.1	-173.9
MetaPaste	-178.9	-305.6

USP-Ribeirão Preto

Easy removal

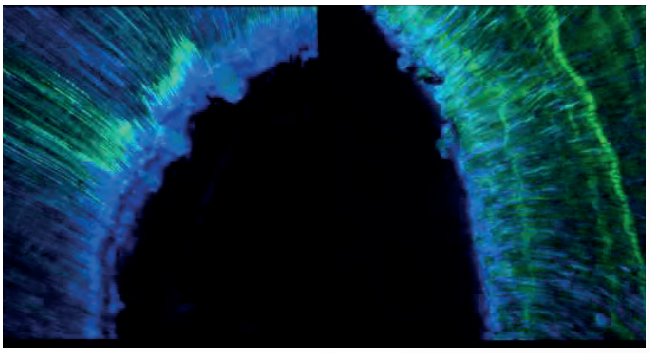
BIO-C® TEMP was developed with a formulation that, in addition to not setting, is easy to remove. This characteristic can be observed through the study carried out at USP - Ribeirão Preto where it shows that BIO-C® TEMP is homogeneous and easy to remove.



Three-dimensional models in computerized microtomography before, after 7 days (**image 1**) and after 14 days (**image 2**) of using intracanal dressing based on bioceramic compounds – BIO-C® TEMP and UltraCal XS. **In red**: filling the root canal with intracanal dressing. **In blue**: remnant of intracanal dressing after removal with final instrument and conventional irrigation with Sodium Hypochlorite.

Particle size

The particle size (≤ 2 µm) gives the BIO-C® TEMP a better flow and penetration into the accessory canals and dentinal tubules. In addition to greater product reactivity, this in turn favors a faster release of Ca^{2+} and OH^{-} ions.



Images in confocal laser scanning microscopy with fluorescence after the use of intracanal dressing based on bioceramic compounds (BIO-C® TEMP) and obturation with bioceramic cement (BIO-C® SEALER). In fluorescent green it is possible to observe the presence of intracanal dressing residue inside the dentinal tubules. In fluorescent blue, the penetration of sealing cement into the dentinal tubules is observed, with the formation of longer and more uniform tags.

Radiopacity

BIO-C® TEMP has a high radiopacity (≥ 9 mm Aluminum scale), providing excellent radiographic visualization.

ABSENCE OF STAINING

The radiopacifier used in the BIO-C® TEMP does not stain the dental structure (Calcium Tungstate)

Image courtesy of Dr. Maria Antonieta Veloso Carvalho de Oliveira.

Composition

COMPONENT	FUNCTION
Tricalcium Silicate (C_3S)	Active components Release of Calcium and Hydroxyl ions
Dicalcium Silicate (C_2S)	
Tricalcium Aluminate	
Calcium Oxide	
Salicylate Ester	Plasticity
Calcium Tungstate	Radiopacity
Polyethylene Glycol	Dispersing agent
Titanium Oxide	Pigmentation

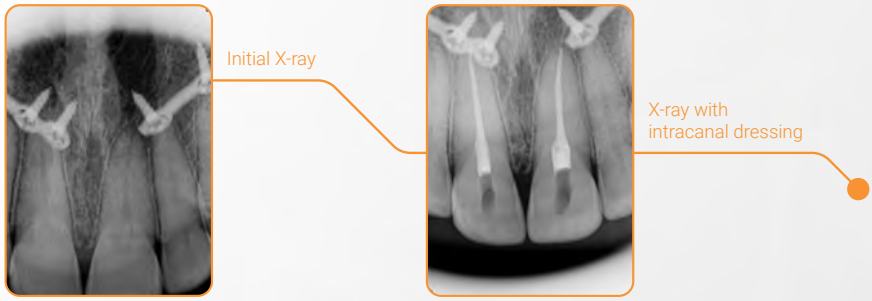
Technical Data

pH	~12
Radiopacity	≥ 9 mm Al
Particle Size	≤ 2 µm
Film thickness	~ 20 µm
Flow	~ 25 mm
Solubility	~ 1.0% (ISO6876 Adapted)

Clinical Cases

Clinical Case - Prof. Victor Nóbrega

Clinical Case - Prof. Dr. Patrícia Ferrari



Testimonial

"Bioceramics are ceramic materials used in medicine anddentistry due to their biocompatibility and the ability tocreate an ideal environment for healing.The BIO-C® TEMP is the first intracanal bioceramic medication of Endodontics, indicated for cases of treatment and retreatment due to its high pH to its antibacterial, bacteriostatic, anti-inflammatory and mineralization-inducing action. Since it is a bioactive product, BIO-C® TEMP interacts with the surrounding tissue, stimulating healing. The tissue system responds to the material as if it was a natural tissue. We use BIO-C® TEMP in the most diverse cases: pulpitis, pulp necrosis, periapical lesion, persistent fistula, inflammatory or purulent exudate, perforation, apexification, external and internal resorption. We recommend the BIO-C® TEMP not only for its actions, but also because it is a ready-to-use product, easy to insert into the root canal and with no painful symptomatology, even in cases where it has been extruded through the apical foramen".

Staff of the Faculty of Dentistry of the Federal University of Uberlândia (FOUFU)
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