

BC Temp FAQs

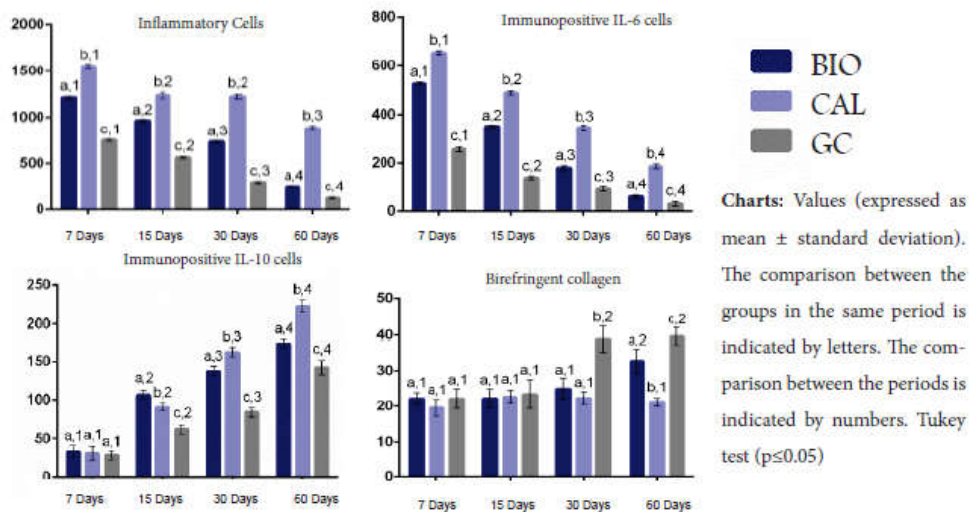
- What makes BC Temp different and better than traditional intracanal dressings such as CaOh2?
 - Gradual and sustained release of both hydroxyl and calcium ions: BC Temp is composed of Calcium Silicates and Calcium Oxide which create CaOh2 when exposed to moisture in the root canal. BC Temp has 3 different crystalline structures each with a distinct rate of hydration and this gradual / staged release eliminates the need for frequent applications. Traditional intra canal dressings start as CaOh2 and have a larger particle size which leads to faster disassociation of Calcium and hydroxyl ions. Furthermore, BC Temp's unique formulation releases more calcium ions than traditional CaOh2* which makes it more effective at hard tissue formation and faster healing of periapical lesions**.

*Table 1. Mean ± standard deviation for calcium ions (mg/dL) released according to the experimental groups at different times.

Groups	7 days	14 days	21 days
BC TEMP	7.32 (0.13)Aa	12.32 (0.15)Ab	15.88 (0.11)Ac
ULTRACAL XS	8.54 (0.21)Aa	7.54 (0.95)Ba	7.85 (0.77)Ba

Capital letters mean statistical difference between lines. Lower case letters mean statistical differences between columns.

Short and long term monitoring of conductivity promoted by BC TEMP. – Study conducted by Jardel Francisco Mazzi Chaves and Manoel Damião de Sousa Neto / Dentistry Faculty, University of São Paulo, Ribeirão Preto/SP – Brazil. Study available upon request.



As can be seen in the figure above, in all periods, the number of inflammatory cells and the immunoexpression of IL-6 in the capsules around BC TEMP were significantly lower ($p < 0.0001$) when compared to the Callen group. At 60 days, the percentage of birefringent collagen was significantly higher in the capsules around the BC TEMP implants, compared to the Callen group ($p < 0.0001$), while the highest values were observed in the control group ($p < 0.0001$). The capsules of BIO and CAL groups exhibited positive structures to von Kossa.

Conclusion: BC Temp is a bioceramic medication that presents biocompatibility and should favor tissue repair faster than Calen medication. In addition, the results suggest that both intracanal medications had bioactive potential.

**Lopes, C.S.; Delfino M.M.; Guerreiro-Tanomaru, J.M.; Tanomaru-Filho, M.; Sasso-Cerri, E.; Cerri, P.S.: "Biocompatibility and Bioactive Potential of a new medication based on Calcium Silicate.", scientific panel presented at the 11th International Congress of the Brazilian Society of Endodontics – SBENDO, Brazil.

- Stronger antimicrobial activity: BC Temp has been shown to be effective against resistant bacteria such as *E. faecalis* and *S. aureus* at minimal inhibiting concentrations. Under the conditions of this study Ultracal XS did not show antimicrobial activity at the concentration tested.* While more studies are underway to compare BC Temp vs. other CaOH₂ materials, the manufacturer believes that BC Temp is more effective due to its unique calcium silicate, calcium oxide and glycol salicylate formulation and the small particle size which allows for more effective penetration vs. conventional CaOH₂.

*In vitro evaluation of the antimicrobial activity – Study conducted by Jade Ormondes de Farias Miguel, Vítor Brandão Ribeiro and Taia Maria Berto Rezende / Healthy and Medical School / Catholic University of Brasília, Brasília/DF – Brazil. Study available upon request.

- Less Cytotoxic with Potential for Better Healing: BC Temp has been shown to be less cytotoxic compared to CaOH₂ and a recent study concluded that the tissue damage, initially caused by BC Temp (due to the high pH which is normal and required for a intracanal dressings), is suppressed more quickly compared to those caused by Calen, favoring the repair of connective tissue.*



* Lopes CS, Delfino MM, Guerreiro-Tanomaru JM, Tanomaru-Filho M, Sasso Cerri E, Cerri OS: “Tissue response of an intracanal medication based on Calcium Silicate (Bio-C Temp) in rat subcutaneous connective tissue”, scientific panel presented at the 11th International Congress of the Brazilian Society of Endodontics – SBENDO, Brazil. Study available upon request.

- Better Compatibility between BC Temp and Bioceramic Sealers: Push-out tests conducted by Dr Jardel F.M. Chaves (University of São Paulo) showed that BC Temp did not influence the reduction of bond strength in teeth filled with bioceramic sealers. * Multiple other studies have shown that CaOh2 reduces the bond strength of sealers when there are trace amounts left in the canal.**

Table 2. Mean ± standard deviation (MPa) of the bond strength values according to the experimental groups of each root canal third.

Groups	Coronal	Middle	Apical
AHP + BCT	2.35 ± 1.02 A	2.28 ± 0.85 A	1.60 ± 1.16 A
AHP + UXS	3.19 ± 0.69 A	1.73 ± 0.52 A	1.26 ± 0.24 Aa
BCS + BCT	5 ± 0.37 B	3.98 ± 0.44 B	2.26 ± 0.39 Ab
BCS +UXS	4.69 ± 0.54 B	3.58 ± 0.39 B	2.28 ± 0.32 Ac

AHP – AH PLUS / UXS – Ultracal XS / BCS – BIO-C SEALER / BCT – BC TEMP

*Influence of bioceramic-based intracanal medication on the bond strength of bioceramic and resin sealers – Study conducted by Dr Jardel Francisco Mazzi Chaves and Dr Manoel Damião de Sousa Neto / Dentistry Faculty, University of São Paulo, Ribeirão Preto/SP – Brazil. Study available upon request.

** Int Endod J. 2004 Mar;37(3):178-84. doi: 10.1111/j.0143-2885.2004.00781.x. Effects of calcium hydroxide on physical and sealing properties of canal sealers [N Hosoya¹](#), [H Kurayama](#), [F Iino](#), [T Arai](#)

- Non-Staining: BC Temp is non-staining whereas CaOh2 has been shown to cause staining.* The main reason for the absence of discoloration with BC Temp is the use of calcium tungstate as the radiopaque agent. This compound is already used in other dental materials developed by the manufacturer such



as MTA REPAIR HP and studies have been conducted proving that it does not discolor. Further discoloration studies on BC Temp are underway.

*Aguiar BA, Frota LMA, Taguatinga, DT, Vivan RR, Camilleri J, Duarte MAH, Vasconcelos, B: “Influence of ultrasonic agitation on bond strength, marginal adaptation, and tooth discoloration provided by three coronary barrier endodontic materials”, Clinical Oral Investigations, published on live, 2019. <https://doi.org/10.1007/s00784-019-02850-y>. Study available upon request.

- **Improved Handling:** BC Temp features a small particle size so it exhibits optimal flow characteristics. Traditional CaOh2 can be gritty and may be difficult to deliver into the canal. According to our clinical evaluators BC Temp flows smoothly from the 29 gauge precision tips provided and is easy to apply deep into the canal.
- **Easier to Remove:** According to a recent study BC Temp was easier to remove compared to UltraCal XS under the conditions of all three of the removal methods. Three different removal methods utilized were a conventional syringe and needle, XP-3D irrigation and ultrasonic irrigation.*

Table I. Microcomputed tomography analysis of percentage (%) of the volume of material removed (mm³) after the use of different intracanal medication removal techniques of BC TEMP and ULTRACAL XS (Ultradent).

% of material removal (mm ³)	BC TEMP			ULTRACAL XS Ultradent		
	Con	XP	US	Con	XP	US
	86.90 ± 1.11	98.60 ± 1.39	94.70 ± 0.36	82.65 ± 2.43	94.54 ± 1.23	90.32 ± 1.34

Conv: conventional syringe and needle technique; XP: conventional technique associated with XP Endo Finisher Instrument; US: conventional technique associated with ultrasonic inserts.

*Influence of different techniques for removing intracanal medications – Study conducted by Rafael Camargo, Jardel Francisco Mazzi Chaves and Manoel Damiano de Sousa Neto / Dentistry Faculty, University of São Paulo, Ribeirão Preto/SP – Brazil. Study available upon request.

- What is included in each box of BC Temp? Each box contains 4 x .5g syringes and 20 x 29 gauge precision placement tips along with the IFU.
- How do I order BC Temp? BC Temp is only available through Brasseler USA and can be ordered through your local representative, through our customer service phone center (800-841-4522) or through our e-commerce site. www.shop.brasselerusa.com

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