

# 6

## Reasons to use Bio-C® REPAIR

1

**READY-TO-USE/  
PUTTY**  
- Easy to use and  
insert into cavity

2

**BIOACTIVE**  
- Stimulates tissue  
regeneration

3

**HIGH ALKALINITY**  
- (pH ~ 12) Bactericidal  
action

4

**SETTING EXPANSION &  
CHEMICAL ADHESION  
TO DENTIN**  
- Prevent bacterial infiltration

5

**RADIOPACIFIER  
ZIRCONIUM  
OXIDE**  
- High radiopacity and  
does not stain

6

**VERY  
COMPETITIVELY  
PRICED**

ENDODONTICS

## BIO-C® REPAIR

Ready to use bioceramic reparative material (putty).



### INDICATION

- Treatment of root or furcation perforation via canal;
- Treatment of root or furcation perforation via surgery;
- Treatment of internal resorption via canal;
- Treatment of communicating internal or external resorption via surgery;
- Retrofilling in endodontic surgery;
- Direct and indirect pulp capping;
- Apexification;
- Apexogenesis and Pulpotomy;
- Pulp regeneration.

BIO-C REPAIR  
4 x 0.5g syringes

850818

### Definition

BIO-C® REPAIR is a ready-to-use bioceramic repair cement (putty). The ready-to-use presentation in a screw-in syringe facilitates the removal of the product for application at the preparation site, simplifying this procedure with great time savings. In addition to its ease of use, it offers all the benefits of bioceramic formulation: induction of tissue regeneration through the release of Ca<sup>2+</sup> ions resulting in the formation of mineralized tissue, bactericidal action due to its high pH, inhibition of bacterial infiltration by setting expansion and chemical adhesion to dentin. As a result, safety and high rates of success in endodontic treatment are obtained.



Ready-to-use/putty



Bioactive



Bactericidal

## Composition

COMPONENT	FUNCTION
Tricalcium Silicate	Setting reaction and release of ions Ca <sup>2+</sup> ions
Dicalcium Silicate	
Tricalcium Aluminate	
Calcium Oxide	Release of Ca <sup>2+</sup> ions
Zirconium oxide	Radiopacity
Silicon Oxide	Consistency
Polyethylene Glycol	
Iron Oxide	Pigmentation

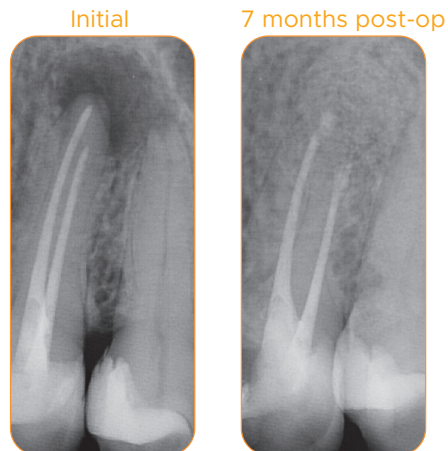
## Key Features and Benefits

### Ready-to-use (putty)

Easy to use screw-in syringe.

### Bioactivity/Release of Ca<sup>2+</sup> ions

Promotes biomineralization by providing rapid tissue regeneration.



Images courtesy of Dr. Vicente Rocha

### Bactericidal (pH ~ 12)

Promotes local decontamination.

### Setting Expansion (0.092 ± 0.05%)

Prevents bacterial infiltration.

### Does not stain tooth structure

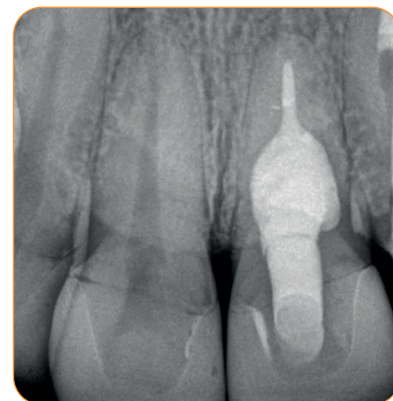
Zirconium oxide as a radiopacifier that does not stain the dental structure.

### Chemical adhesion to dentin

Formation of a zone of mineral infiltration promoting a biological seal.

### Radiopacity

More than 7mm Aluminum step-wedge. Great radiographic visualization.



Images courtesy of Dr. Vanessa Pandolfi.

### Non-resinous composition

It allows use in humid environments without loss of properties, especially in surgeries where humidity control of the operative field is a challenge in the procedure.

### Hydrophilic

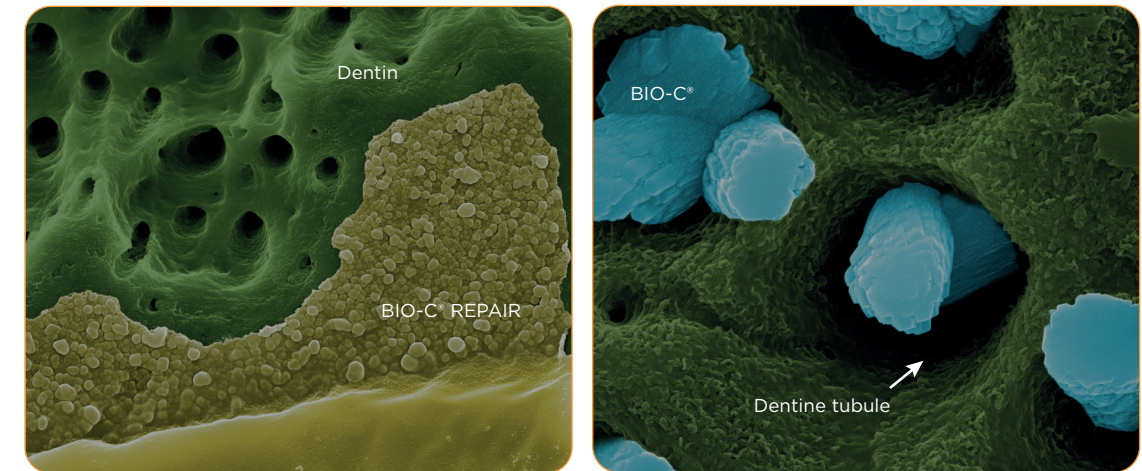
Absorbs moisture from the medium by starting the setting process.

### Non-toxic

Contains no heavy metals.

## Micronized particles (<2µm)

Higher reactivity, accelerating the healing process and greater penetration into the dentinal tubules.



Images provided by Dr. Celso Klein: Scanning microscopy. Image with computerized coloration for didactic purposes.



The BIO-C\* REPAIR comes packaged in a syringe with a threadable piston. It allows removal of the product from the syringe in small portions with no effort or waste.

## Technical Data

Setting Time*	≤ 120 minutes
Radiopacity*	≤ 7,0 mm Al
pH	~ 12
Particles Size	< 2 µm
Solubility*	< 3%
Setting Expansion	0.092 ± 0.05%
Resistance to Compression	8 ± 3 MPa

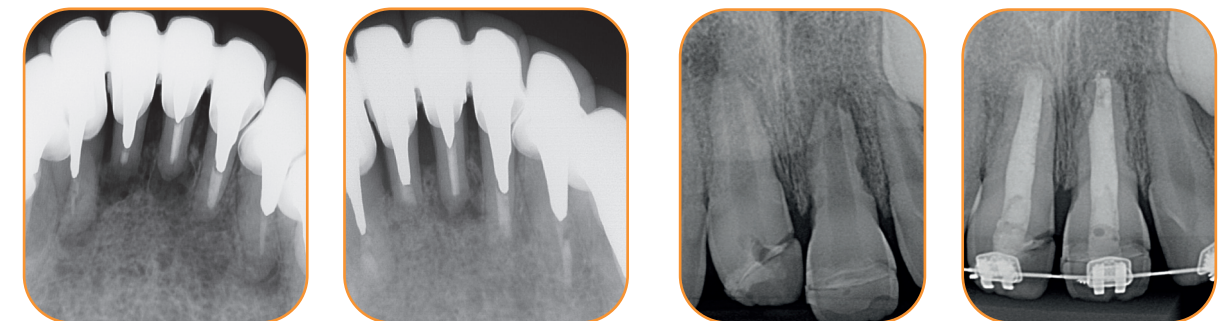
\*Norma ISO 6876:2012

## Mechanism of Action

When it comes into contact with water present in the dentin tubules, BIO-C\* REPAIR forms Ca(OH)<sub>2</sub> that interacts with tissue fluids and dissociates and releases Ca<sup>2+</sup> and OH<sup>-</sup> ions.

The released Ca<sup>2+</sup> ions react with CO<sub>2</sub> from the bloodstream forming CaCO<sub>3</sub> granules (calcite), stimulating fibrinectin conditioning. Fibrinectin stimulates cell adhesion and differentiation that results in the formation of hard tissue. The release of OH<sup>-</sup> ions promotes an increase in pH making the alkaline medium responsible for the bactericidal action of BIO-C\* REPAIR.

## Clinical Cases



Images courtesy of Dr. Vicente Rocha

Images courtesy of Dr. Maria Cristina Carvalho