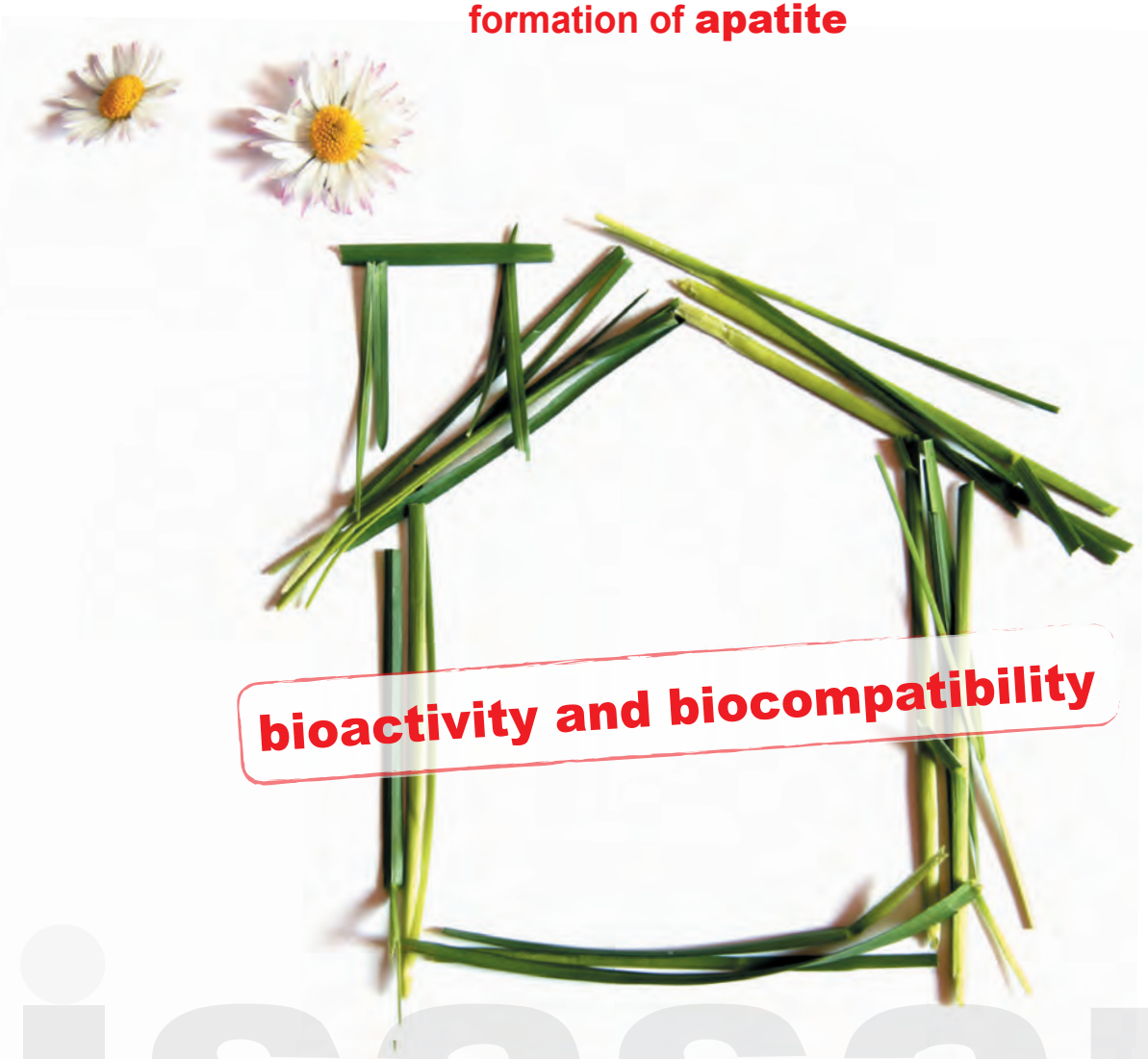
From the original research

TECH BIOSEALER

the endodontic cement inducing formation of **apatite**



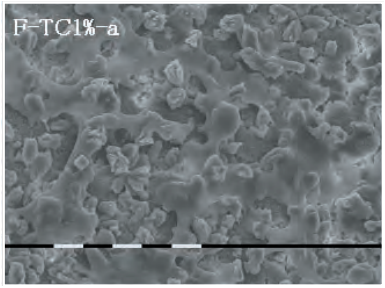
bioactivity and biocompatibility

TECH BIOSEALER

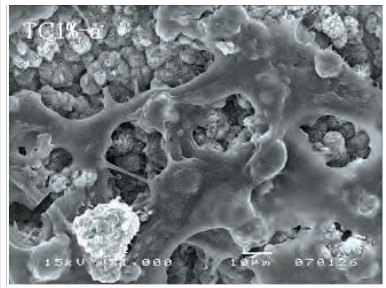
- Biocompatibility
- Antibacterial activity
- Bioactivity with apatite formation

- Harden in damp conditions and in presence of organic fluids
- Dimensional stability (phyllosilicate patented)
- Marginal adjustment
- Wear resistance
- Adequate expansion

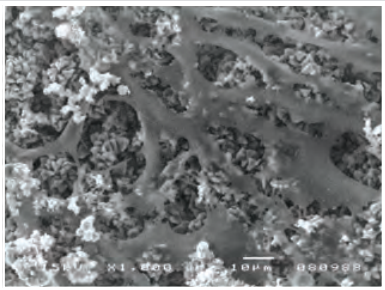
ENDO



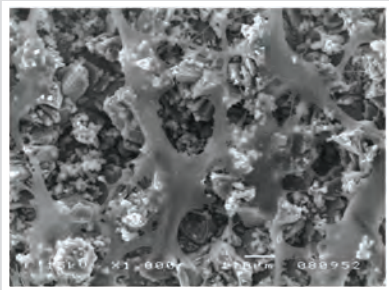
CAPPING



APEX



ROOT END

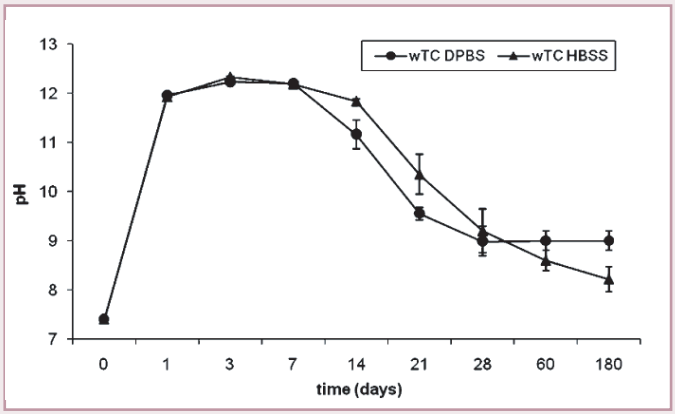


BIOCOMPATIBILITY

The SEM observations show that cells are able to adhere the surface and proliferate colonizing the material (osteoconductive activity of the cements).

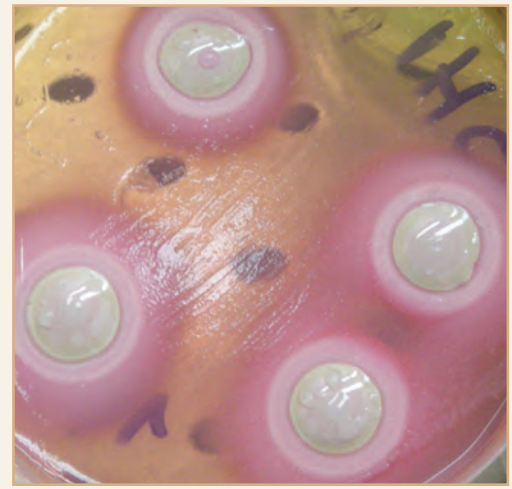
Gandolfi MG et al. (J Endod 2008, JBMR 2008, J Endod 2010)

ANTIBACTERIAL activity



The cement increases the pH of the fluids till 12, playing then antibacterial activity. The pH remains high for several days.

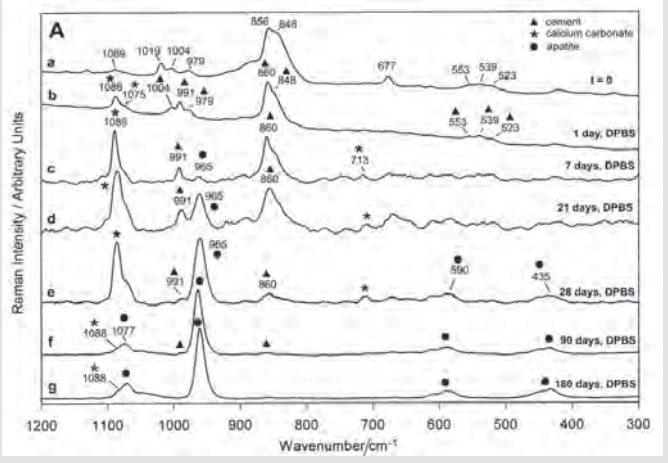
Gandolfi MG et al. (Clin Oral Invest 2009)



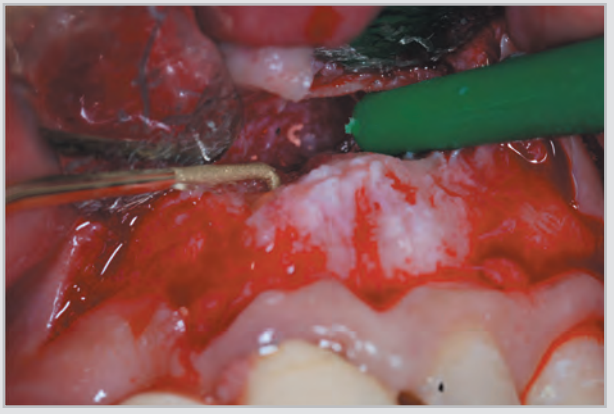
Inhibition area of bacterial growth (Enterococcus faecalis, Streptococcus mutans, Pseudomonas aeruginosa) of Tech BIOSEALER ENDO cement.

(Sambri V 2009 - per gentile concessione Ist. Microbiologia Università Bologna)

BIOACTIVITY



The surface analysis by micro-Raman spectroscopy shows the formation of an apatite film already after 7 days.
Taddei P (da Gandolfi MG et al, Clin Oral Invest 2009)

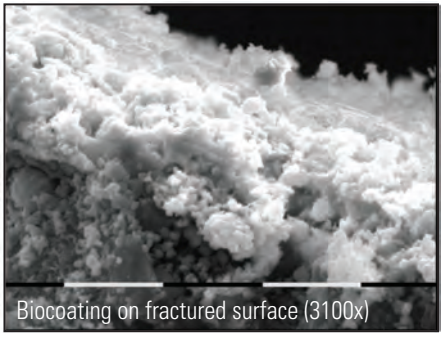


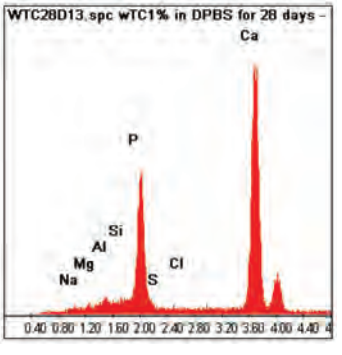
Harden in wet conditions and with presence of organic fluids

BIOSEALER will harden also in presence of blood, plasma, saliva and dentinal fluid.
(courtesy of Chersoni S)

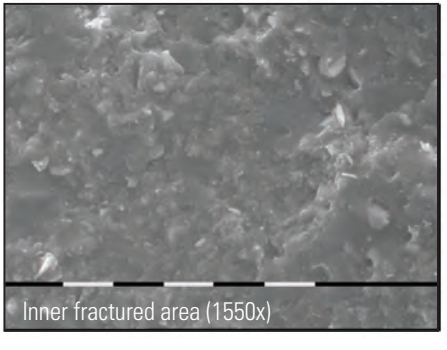
OSTEOINDUCTION

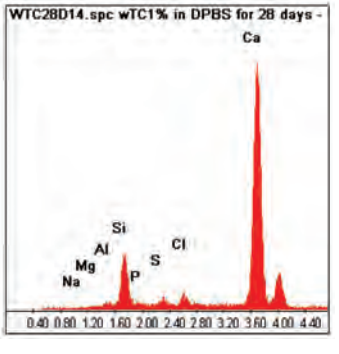
Contact with organic fluids (blood, plasma, dentinal fluid, saliva) starts the formation of apatite on the surface of Tech BIOSEALER cements. The analysis by SEM-EDX show a layer of calcium phosphate (apatite) on the surface of cements and a calcium silicated structure inside.
Gandolfi MG et al. (Clin Oral Invest 2009, JABB 2009)





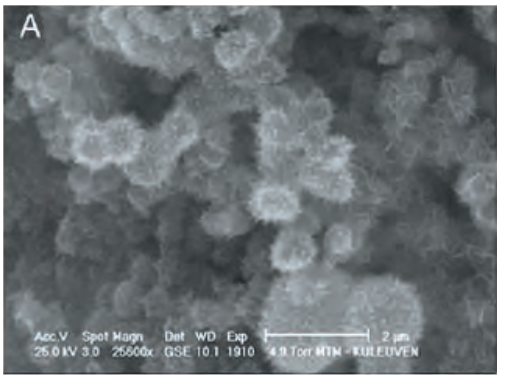
EDX of the surface layer.
It shows the peaks of Ca and P

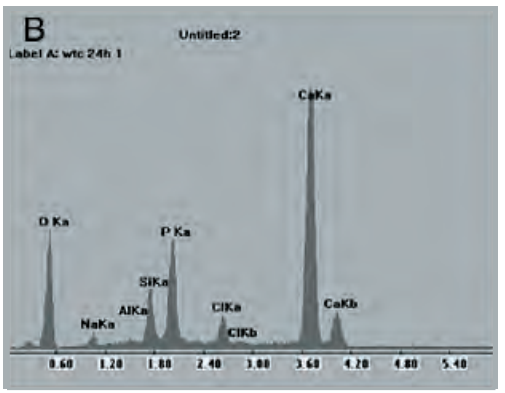




EDX interior.
It shows the peaks of Ca and Si

BIOACTIVITY



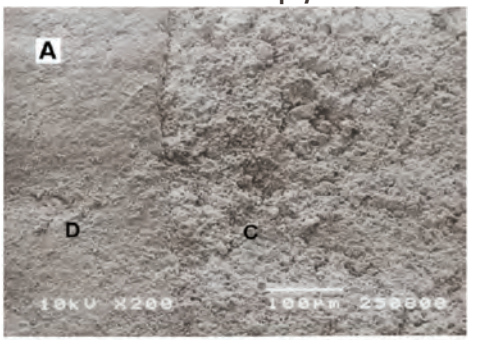


Basic research.

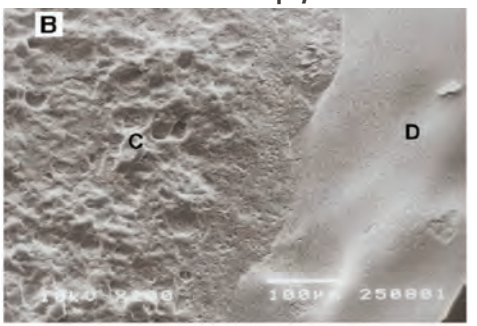
Tech BIOSEALER cements produce spherulites of apatite (bioactivity) on the surface already after 24 hours contact with organic fluids. The apatite is the mineral that forms and builds dentin and bone.
Gandolfi MG et al. (J Endod 2010)

Dimensional stability and marginal adaptation

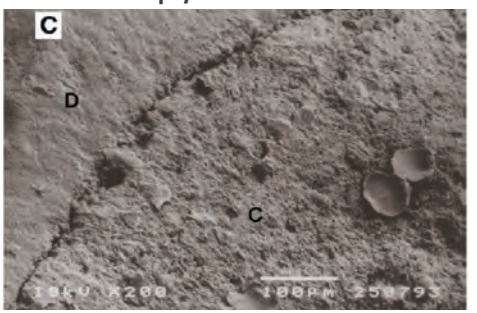
Tech Biosealer cement with phyllosilicate



Tech Biosealer cement with phyllosilicate



Cement without phyllosilicate



Tech BIOSEALER cements have dimensional stability and marginal adaptation because of their innovative formulation and the presence of a phyllosilicate patented. The electron microscopy observations show the absence of porosity and marginal gaps at the interface dentin/cement.
Gandolfi MG et al. (J Endod 2007).

TECH BIOSEALER endo

Cement for endodontic treatments.

- Perfect biocompatibility
- Hardens in damp or wet channels (with open apex)
- Excellent combination with warm gutta-percha
- Volumetric expansion of 0.35 to 12.50%
- Seal of the porosity thanks to the formation of apatite
- High antibacterial activity resulting from the release of calcium hydroxide
- Excellent result of the apical seal after 12 months
- Excellent RX-opacity

Packaging:
blister pack of 10 capsules of 270 mg each.
1 bottle 5 ml of liquid DPBS

TECH BIOSEALER apex

Cement for apexification

- Excellent biocompatibility
- High release of calcium hydroxide
- Hardens in damp conditions due to open apex
- Hardens also mixed with blood or other body fluids
- Induces the formation of bone tissue (apatite) at apical level
- It obtains a definite apical seal

Packaging:
blister pack of 5 capsules of 270 mg each.
1 bottle 5 ml of liquid DPBS

TECH BIOSEALER root end

Cement for retrograde fillings

- Perfect biocompatibility and bioactivity
- Immediate marginal adaptation
- Reduced hardening time after application in rear-cavity
- Hardens in any condition of humidity and also in presence of blood
- Perfect marginal stable seal
- Formation of a bioreactive apatite surface
- High antibacterial activity and RX-opacity

Packaging:
blister pack of 5 capsules of 270 mg each.
1 bottle 5 ml of liquid DPBS

TECH BIOSEALER capping

Cement for direct capping

- Hardens quickly also in presence of blood and humidity
- Immediate formation and release of calcium hydroxide
- Formation of secondary dentine in 3-4 weeks
- Perfect biocompatibility with exposed pulp tissue
- Stimulates pulp stem cells

Packaging:
blister pack of 5 capsules of 270 mg each.
1 bottle 5 ml of liquid DPBS

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