



CanalPro[®]

Endodontic Irrigation System

Saves time and improves outcomes

- More efficacious solutions
- Innovative delivery instruments
- Color-coded for safety and convenience

CanalPro®

Endodontic Irrigating Solutions

When it comes to irrigating, Canal Pro Endodontic Solutions are your best choice for successful treatment. We have engineered our endodontic solutions to optimize the time spent on irrigation, giving you the best approach to cleansing canals and the BEST OUTCOMES.

CanalPro NaOCl EXTRA – 2X More Digestive

- For irrigation/debridement of root canals before and during instrumentation
- Same patent pending formula as Chlor-XTRA™*
 - 1) 2x wetter: Powerful wetting agents and proprietary surface modifiers enable penetration into hard-to-reach areas such as lateral canals and isthmuses
 - 2) 2x more digestive than regular Sodium Hypochlorite cuts tissue dissolution time in half
- Better lubricity
 - Multiple Patents Pending

480ml – Cat No. 60011159

CanalPro NaOCl

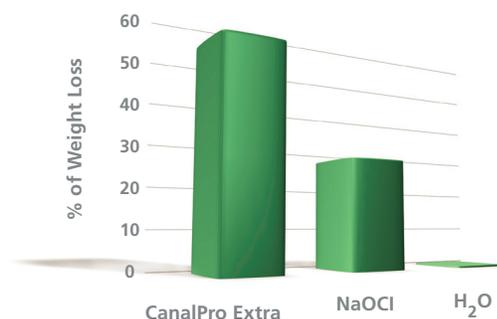
- For irrigation/debridement of root canals during and after instrumentation
- Available in 6% and 3% formula

6% 480ml – Cat No. 60011161

3% 480ml – Cat No. 60011160



> Comparison of Tissue Dissolution Capability at Room Temperature:



Results:

| Solution | | CanalPro Extra | 6% NaOCl | H ₂ O |
|----------------------------------|------------------|----------------|--------------|------------------|
| Tissue Weight (mg) | Before Treatment | 79.78 ± 10.59 | 73.76 ± 6.10 | 62.18 ± 6.17 |
| | After 5 minutes | 37.52 ± 6.54 | 53.72 ± 7.01 | 61.88 ± 5.62 |
| Percentage of Weight Loss (%±SD) | | 53.16 ± 2.60 | 27.25 ± 5.62 | 0.41 ± 1.10 |

*Registered Trademark of Vista Dental Products

**pH Measurements: Using Fischer Scientific AR 20 model, Electrode standardized using pH Standard Solutions 10 and 4

CanalPro EDTA

17% EDTA solution (pH 8.5)

- Removes smear layer and dentin mud
- Opens dentin tubules for:
 - Disinfection solutions to work better
 - Better adhesion of sealers and obturation materials

480ml – Cat No. 60011157

120ml – Cat No. 60011158



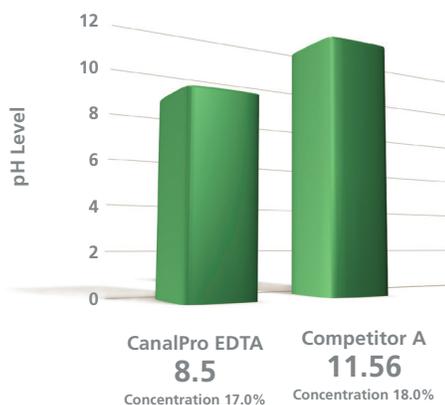
CanalPro CHX-Ultra

- Same patent pending formula as CHX-Plus™*
- Use as a final step for long-lasting cleansing
- Kills multi-species biofilm two times faster and planktonic bacteria ten times faster than standard 2% Chlorhexidine
- Powerful wetting agents and surface modifiers enable CanalPro CHX-Ultra to penetrate into lateral canals and isthmuses
 - Multiple Patents Pending

480ml – Cat No. 60013994

For more information or to place an order through your dealer call: 800.221.3064

**Studies show:
Lower pH is Critical to Performance****
(optimal pH range is 6-10)



CanalPro Syringe Station

No Mess! No Waste! Less Time!

- Cost-effective way to create a dedicated area for syringe filling
- Syringe activated valve
- Low level light indicator
- Helps prevent counter, carpet and scrub damage
- Several units may be connected to create a convenient station for filling multiple solutions
 - Patented

1 Station – Cat No. 60011178



Color Syringes

- Helps increase safety and minimize the chance of syringe swap
- Latex-Free, 10cc color-coded syringes offer a fast, easy way to organize and identify syringes for irrigants and solution
- Standard luer lock style

| | | |
|------|--------|------------------------------------|
| 10ml | Red | 50 syringes/box – Cat No. 60011173 |
| 10ml | Blue | 50 syringes/box – Cat No. 60011174 |
| 10ml | Yellow | 50 syringes/box – Cat No. 60011175 |
| 10ml | White | 50 syringes/box – Cat No. 60011176 |
| 5ml | Red | 50 syringes/box – Cat No. 60019321 |
| 5ml | Blue | 50 syringes/box – Cat No. 60019322 |
| 5ml | Yellow | 50 syringes/box – Cat No. 60019323 |
| 5ml | White | 50 syringes/box – Cat No. 60019324 |

CanalPro Irrigator



- A simple, disposable, simultaneous irrigation and evacuation device
- Designed for easy one-hand use
- Provides safe, cost-effective apical irrigation and evacuation
- Bellows design enables adjustment to working length for controlled apical third placement
- Fluid flows from apical to coronal region to virtually eliminate clogging
- Ratcheting syringe allows for a tactile and audible signal for every 0.2ml delivered
–Patent pending

10/box – Cat No. 60011172

CanalPro UltraSonic Irrigator



- Controlled delivery of Sodium Hypochlorite during debridement of canals and isthmuses
- Enhanced tactile flow with ratcheting syringe that measures delivery of 0.2ml of solution with each audible and tactile "click"
- Fits most Piezo Scalers • Patent pending

Includes: 12 Ultrasonic Tips 30 ga
12 Irrigation Syringes
2 Silicone Adapters
1 ByPass Tip Wrench

Acteon/Satelec Style – Cat No. 60011180

EMS Style – Cat No. 60011181

J Endod. 2011 May; 37 (5):657–661.

Antimicrobial Efficacy of Chlorhexidine against Bacteria in Biofilms at Different Stages of Development

Shen Y , Stojicic S, Haapasalo M
 Division of Endodontics, Department of Oral Biological and Medical Sciences,
 Faculty of Dentistry, University of British Columbia,
 Vancouver, British Columbia, Canada

INTRODUCTION: Detailed knowledge on the nature of the physiological and metabolic phases of biofilm development is important in combating resistant, disease associated biofilms. The aim of this study was to examine the susceptibility of multispecies biofilms at different phases of growth to root canal irrigants.

METHODS: The multispecies biofilms were grown from plaque bacteria on collagen-coated hydroxyapatite discs in brain-heart infusion broth for time periods ranging from 2 days to several months. Biofilms of different age were subjected to 1-, 3-, or 10-minute exposure to 2% chlorhexidine (CHX) or CHX-Plus. After treatment, the volume ratio of dead bacteria in biofilms was assessed by confocal laser scanning microscopy by using a LIVE/DEAD viability stain. The thickness of biofilms increased during biofilm development. The proportion of killed bacteria in mature biofilms (3 weeks) was lower than in young biofilms.

RESULTS: CHX-Plus showed higher levels of bactericidal activity at all exposure times and biofilm age than 2% CHX ($P < .01$).

J Endod. 2010 Jan;36(1):143-6.

Evaluation of a sonic device designed to activate irrigant in the root canal.

Jiang LM, Verhaagen B, Versluis M, van der Sluis LW.
 Department of Endodontology, Academic Centre of Dentistry Amsterdam (ACTA), University of Amsterdam and VU University, Amsterdam, The Netherlands. l.jiang@acta.nl

INTRODUCTION: The aims of this study were to evaluate the removal of dentin debris from the root canal by sonic or ultrasonic activation of the irrigant and the physical mechanisms of sonic activation by visualizing the oscillations of the sonic tip, both inside and outside the confinement of the root canal.

METHODS: Roots of 18 canines were embedded, split, and prepared into standardized root canals. A standard groove was cut on the wall of one half of each root canal and filled with the same amount of dentin debris before irrigation procedures. The removal of dentin debris was evaluated after different irrigation procedures. The oscillations of the sonic tip were visualized ex vivo by using high-speed imaging at a time scale relevant to the irrigation process, and the oscillation amplitude of the tip was determined under 20x magnification.

RESULTS: After irrigation, there was a statistically significant difference between the experimental groups ($P < .0001$). Without irrigant activation, the grooves were still full of dentin debris. From the ultrasonic activated group, 89% of the canals were completely free of dentin debris, whereas from the sonic group, 5.5%-6.7% were ($P = .0001$). There was no significant difference between the sonic activation groups.

CONCLUSIONS: Activation of the irrigant resulted in significantly more dentin debris removal; ultrasonic activation was significantly more efficient than sonic activation. The oscillation amplitude of the sonically driven tips is 1.2 +/- 0.1 mm, resulting in much wall contact and no cavitation of the irrigant.

> Comparison of Tissue Dissolution Capability at Room Temperature: NaOCl EXTRA

Tissue dissolution by sodium hypochlorite: effect of concentration, temperature, agitation and surfactant addition

Haapasalo M. Division of Endodontics, Department of Oral Biological and Medical Sciences, University of British Columbia, Vancouver, Canada.

Aim: Sodium hypochlorite is the most commonly used endodontic irrigant due to its antimicrobial and tissue dissolving activity. The aim of this study was to evaluate and compare the effects of concentration, temperature and agitation on the tissue dissolving ability of sodium hypochlorite. In addition, a hypochlorite product with added surface active agent was compared with conventional hypochlorite solutions.

Methods: Three sodium hypochlorite solutions from two different manufacturers in concentrations of 1%, 2%, 4% and 5.8% were tested at room temperature, 37°C and 45°C with and without agitation by ultrasonic and sonic energy and pipetting. Distilled and sterilized tap water were used as controls. Pieces of bovine muscle tissue (68±3) were placed in 10 ml of each solution for five minutes. In selected samples, agitation was performed for one, two or four 15 sec periods per each minute. The tissue specimens were weighed before and after treatment, and the percentage of weight loss was calculated.

Results: Weight loss (dissolution) of the tissue increased almost linearly with the concentration of sodium hypochlorite. Higher temperatures and agitation considerably enhanced the efficacy of sodium hypochlorite. The effect of agitation on tissue dissolution was greater than that of temperature, continuous agitation resulting in fastest tissue dissolution. Hypochlorite with added surface active agent was most effective in tissue dissolution in all experimental situations.

Conclusions: *Optimizing the concentration, temperature, flow and surface tension can improve the tissue dissolving effectiveness of hypochlorite even 50-fold.*

J Endod. 2002 Jul;28(7):501-2.

The demineralizing effects of EDTA at different concentrations and pH.

Serper A, Calt S. Department of Endodontics, Faculty of Dentistry, Hacettepe University, Ankara, Turkey.

The purpose of this study was to compare the effects of concentration and pH variations of EDTA on dentin demineralization. Twenty extracted, human permanent teeth with single canals were used in this study. Demineralizing effects of EDTA solutions at 10% and 17% concentrations at pH 7.5 and 9.0 were determined by measuring the amount of liberated phosphorus 1, 3, 5, 10, and 15 min after exposure. The results showed that the amount of phosphorus liberated from dentin was greater with increased EDTA concentration and increased time of exposure, and it was more effective at neutral pH than pH 9.0. The pH of the EDTA solutions did not display any significant alterations during the demineralization process.

PMID: 12126374 [PubMed - indexed for MEDLINE]

J Endod. 2009 Jan;35(1):95-7. Epub 2008 Nov 7.

Antimicrobial susceptibility of monoculture biofilms of a clinical isolate of Enterococcus faecalis.

Williamson AE, Cardon JW, Drake DR. Department of Endodontics, University of Iowa College of Dentistry, Iowa City, Iowa, USA. anne-williamson@uiowa.edu

The purpose of this study was to create a monoculture biofilm of a clinical isolate of *Enterococcus faecalis* and to determine susceptibility against four antimicrobial irrigants. Biofilms were subjected to 1-, 3-, and 5-minute exposures to one of the following irrigants: 6% sodium hypochlorite (NaOCl), 2% chlorhexidine gluconate (CHX) or one of two new products, <6% NaOCl with surface modifiers (Chlor-XTRA) or 2% CHX with surface modifiers (CHX-Plus) (Vista Dental Products, Racine, WI). It was hypothesized that NaOCl and CHX would be equally effective and that addition of surface modifiers would improve bactericidal activity of the respective irrigants compared to the original formulations. Results indicate that 6% NaOCl and Chlor-EXTRA were significantly superior against *E. faecalis* biofilms compared to 2% CHX and CHX-Plus at all time points except five minutes.

J Endod. 1987 Apr;13(4):147-57.

A scanning electron microscopic evaluation of four root canal irrigation regimens.

Baumgartner JC, Mader CL.

A scanning electron microscope was used to evaluate the debridement capabilities of four irrigation regimens on both instrumented and uninstrumented root canal surfaces. A typical smear layer was seen on the instrumented surfaces of specimens irrigated with saline and NaOCl. EDTA demineralized much of the smear layer from the instrumented surfaces and exposed the orifices of some of the underlying dentinal tubules. NaOCl removed all pulpal remnants and predentin from the uninstrumented surfaces of the root canal while EDTA and saline left pulpal remnants and predentin on the uninstrumented surfaces. The combination of NaOCl and EDTA used alternately completely removed the smear layer from the instrumented root canal surfaces as well as the pulpal remnants and predentin from the uninstrumented surfaces. In addition, the combination of NaOCl and EDTA caused the exposed calcospherites on the uninstrumented surfaces to have an eroded appearance.

PMID: 3106553 [PubMed - indexed for MEDLINE]

CanalPro®

Endodontic Irrigation System

Your best choice for improving outcomes. Coltène/Whaledent brands represent over a century of experience in providing essential and reliable endodontic products and materials that are clinically proven to ensure successful endodontic therapy.

CanalPro AirWater Irrigator

- Direct air/water flow without overspray or splashing
- Delivers a gentle and effective stream of water and/or air for superior and efficient cleaning or drying of any work area
- Fits most standard and "Quick Change" AirWater syringes
- Adapts all luer lock style needle tips
- Autoclavable



2" CanalPro AirWater Irrigator

(includes (1) CanalPro Irrigator and (5) Blue Tips)

– Cat No. 60011177

CanalPro NiTi Tips

- The "Gold Standard" for endodontic irrigation
 - Extremely flexible for superior canal tracking
 - Adjustable needle angle for maximum flexibility
 - Longer life cycle with less clogging
 - Autoclavable for cost-effective repeated use
- Patented



6/cup ((4) 17mm, (2) 25mm)

– Cat No. 60011165

CanalPro Flex-Tips

- Bendable to facilitate easy access for irrigation, application and micro-aspiration.
 - Excellent canal tracking
 - Unique non-kink polyamide tip
 - Disposable (single use) tip
- Patented



30ga 20/cup – Cat No. 60011164

CanalPro Irrigating Tips

- Ideal for irrigation of canals, pockets and fistulas

Slotted-end tips

- Slotted and side-vented

27ga 100/bag – Cat No. 60011167

30ga 100/bag – Cat No. 60011168



Side-port tips

- Closed end for side port delivery

27ga 100/bag – Cat No. 60011169

30ga 100/bag – Cat No. 60011170



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