

# vVARDIS

SWITZERLAND

BIOMIMETIC DENTAL SCIENCE

vVARDIS PROFESSIONAL  
Biomimetic, peptide-based  
technologies for enamel regeneration



# A disruptive technology with a variety of applications

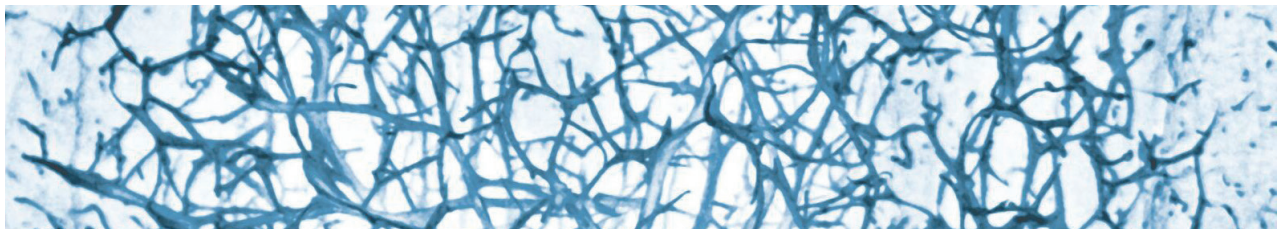
## vVARDIS BIOMIMETIC TECHNOLOGY

Nature as a model. During odontogenesis, an enamel matrix enables the ordered growth of hydroxyapatite crystals. Once odontogenesis is complete, the natural matrix is degraded. As a result, enamel cannot regrow or repair itself naturally.

The vVARDIS technology is a peptide-based technology that takes the enamel matrix as its model. Developed at the vVARDIS research centre in Switzerland, this technology has a high affinity for hydroxyapatite and can regenerate enamel by mimicking the natural biological mineralisation process.

The clinically proven, patented and award-winning vVARDIS technology is incredibly versatile and can be adapted into multiple formulations targeting a broad range of oral health needs:

- In **liquid form**, it can provide deep mineralisation of early caries safely, easily and without pain. It can diffuse into carious lesions where it self-assembles to form a three-dimensional biomatrix. This serves as a seed of crystallisation for new hydroxyapatite crystals and as a scaffold for new enamel.
- As a **stable, three-dimensional matrix in dental gels**, it adheres well to enamel and dentin thanks to the high affinity of the peptide to hydroxyapatite. It forms a stable protective barrier on the tooth surface and - together with fluoride and calcium ions - acts as protection against acids and as a desensitiser.
- In **combination with hydroxyapatite**, it creates a smooth, bright, and white mineral-rich layer on the enamel surface that naturally improves the aesthetic appearance of teeth while nourishing the enamel.



P11-4 nano-fibres (Curodont™) x 120'000.  
Picture: A. Aggeli and S. Maude, Leeds

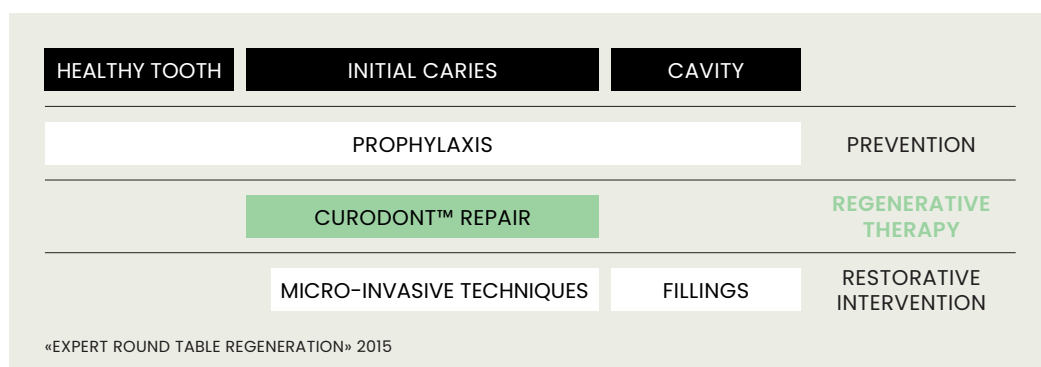
## CURODONT™ REPAIR

# The first and only initial caries treatment via Guided Enamel Regeneration



- Clinically proven, patented biomimetic P1I-4 Monomer-Peptide formulation
- The only technology that works until the depth of the caries lesion – not just on the surface<sup>1</sup>
- Above 90% clinical success rate: arrest and regression of initial lesions, up to the dentin (vs. up to 35% with fluoride varnish alone)<sup>2,3,4,5,6</sup>
- Non-invasive, easy and pain-free application
- Preserves the integrity of the tooth and prevents the tooth death spiral
- Suitable for all patients, including children
- Applicable also by a dental hygienist\*

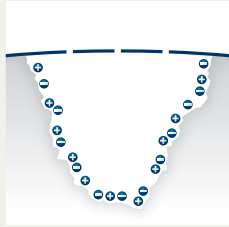
## A BREAKTHROUGH SOLUTION FOR EARLY CARIES



CURODONT™ REPAIR is the as-yet-untapped link between prevention and invasive restorative treatments. It enables effective therapy of initial caries, in-depth regeneration of the enamel and leads to the need for fewer restorations.

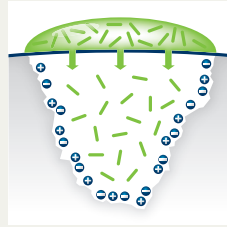
## MODE OF ACTION – GUIDED ENAMEL REGENERATION

The P11-4 peptides in CURODONT™ REPAIR diffuse into the lesion where they self-assemble to form a biomatrix. The biomatrix acts as a scaffold to draw calcium and phosphate ions from the saliva deep into the lesion, resulting in the formation of new hydroxyapatite crystals.



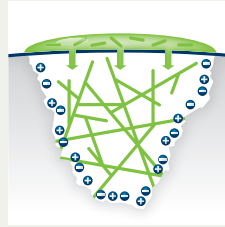
**t = 0 min**

Carious lesion with a pseudo-intact enamel surface



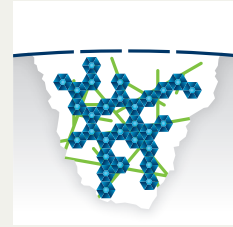
**t = 5 min**

Monomer-Peptide technology diffuses to the depth of carious lesion within 5 minutes



**t = 5 min**

The peptides self-assemble within the carious lesion, forming a biomatrix



**t = 3 months**

The biomatrix attracts calcium and phosphate ions from the saliva, forming new hydroxyapatite crystals, thus leading to remineralization

## >90% CLINICAL SUCCESS & SUPERIOR TO FLUORIDE VARNISH

Real-life long-term clinical study in public pediatric dental clinic in Chur (CH).<sup>6</sup>

1x application of CURODONT™ REPAIR in office + 1x/week CURODONT™ PROTECT at home

**405**

Early lesions\*

\*with up to 6-years follow up

**93%**

Success with 1x application\*

\*no restorative treatment needed

**90%**

Did not cavitate on follow-ups 2-6yrs\*

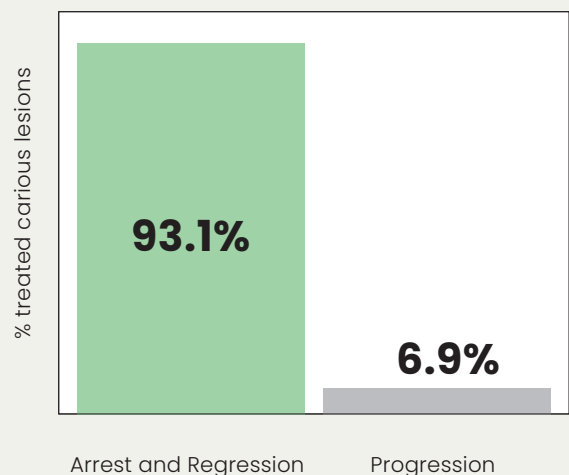
\*long-term effectiveness

**37-40% Regression**

Even in D3 lesions\*

\*regression independent of initial depth

Changes at last follow up compared to baseline



Clinical studies also show significantly better inactivation and regression of early caries with CURODONT™ REPAIR (CR) in comparison to fluoride varnish (FV) alone.<sup>2,4</sup>

## VISIBLE EVIDENCE

### White spot lesion in the aesthetic zone

Data on file, 2022



Day 0



After 2 months

### Early caries on buccal surface

Bröseler F et al. Clin Oral Investig 2020;24:123-132



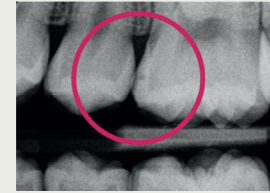
Day 0



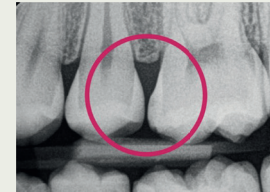
After 6 months

### Regression of early carious lesion on proximal surface of first molar

Dr. Denisa Godenzi, EAPD Conference 2018



April 2015



September 2016

## INDICATIONS

- Initial proximal caries D1, D2, (D3, non-cavitated)
- Initial occlusal caries
- Smooth surface caries
- Initial caries of deciduous teeth

## HOW TO APPLY

The non-invasive therapy with CURODONT™ REPAIR is as safe as its application is easy. The entire process of applying CURODONT™ REPAIR is completed within 8-10 minutes, without drilling, anesthesia, or pain and it can be conducted by a dentist or a dental hygienist\*.

1. Professional tooth cleaning
2. Clean the affected tooth surface with 2% sodium hypochlorite (20 sec.)
3. Etching with phosphoric acid 35% (20 sec.), rinse and dry.
4. Apply CURODONT™ REPAIR
5. Wait for 5 min, then discharge the patient with routine instructions



STEP 2



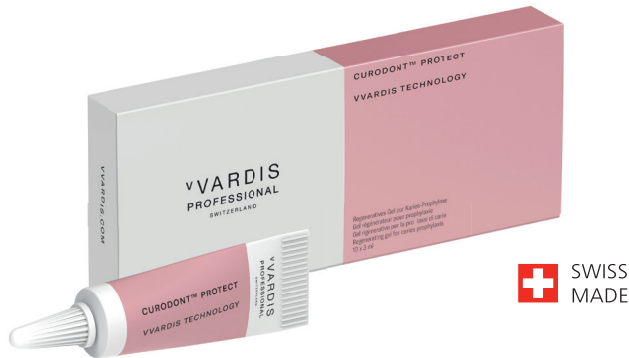
STEP 3



STEP 4

# CURODONT™ PROTECT

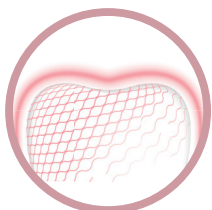
## Remineralizing gel for protection from caries and erosion



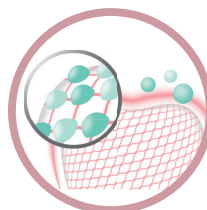
- Clinically proven, biomimetic P11-4 Oligo-Peptide technology enriched with calcium, phosphate and fluoride
- Forms a stable mineral-rich protective layer on the tooth surface\*
- Protects effectively from early caries progression around orthodontic brackets<sup>1</sup>
- Provides superior enamel strength and hardness<sup>\*\*</sup>,<sup>2,3</sup>
- Protects from demineralization and promotes remineralization<sup>1</sup>
- Provides a noticeably smooth, shiny finish<sup>3,4</sup>
- Topical gel in mint flavour
- Suitable for all patients 6+

### MODE OF ACTION

In CURODONT™ PROTECT the P11-4 Oligo-Peptide technology is combined with calcium, phosphate and fluoride\*. It adheres to the tooth surface forming a protective mineral-rich layer. The layer attracts minerals from saliva for effective and lasting protection from bacterial and food acids.



The Oligo-Peptide technology creates a protective layer

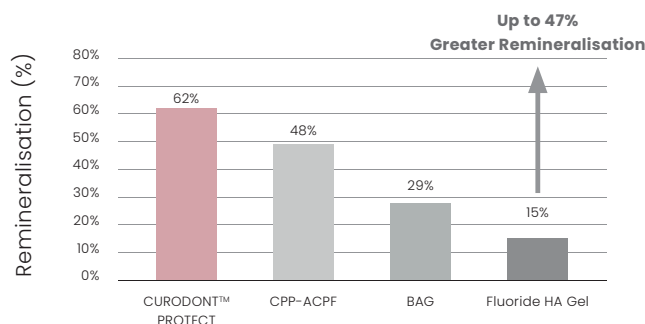


The layer attracts minerals from saliva to shield and remineralizes the enamel

## SCIENTIFIC EVIDENCE

### Superior enamel strength and hardness<sup>2</sup>

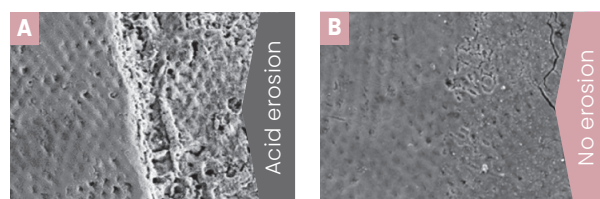
Surface Microhardness Analysis



CURODONT™ PROTECT showed a significantly higher increase in the microhardness of enamel, indicating higher remineralization of enamel lesions as compared to other test agents.<sup>2\*</sup>

### Effective, Protection Against Enamel Erosion<sup>5</sup>

In vitro analysis against acid challenge



A) Enamel damaged by acid (pH 3,1 h)  
L: Intact enamel surface protected with acrylic  
R: Only with toothpaste (1450 ppm fluoride)

B) Enamel protected from acid (pH 3,1 h)  
L: Intact enamel surface protected with acrylic  
R: With CURODONT™ PROTECT protective layer

CURODONT™ PROTECT lays down a stable, protective layer on the enamel surface that protects it from dietary acids better than a regular fluoride toothpaste (1450 ppm fluoride).

### Effective caries protection for orthodontic patients – clinically proven

Regular use of CURODONT™ PROTECT helps during orthodontic treatments. Clinical studies confirm that CURODONT™ PROTECT helps against the formation of early caries in the enamel, protecting patients with fixed orthodontic appliances better than fluoride varnish.<sup>1</sup>

### Superior\*\*\* remineralization after bleaching treatments – clinically proven

CURODONT™ PROTECT delivers effective remineralization following bleaching treatments. Clinical studies have shown that CURODONT™ PROTECT helps to recover the surface smoothness and hardness of enamel after bleaching.<sup>3,4</sup>

## INDICATIONS

### Caries Prevention

- After dental hygiene treatments
- Higher risk caries patients
- During orthodontic & aligner treatments
- Patients with Xerostomia

### Erosion Protection

#### Alongside Bleaching Treatments

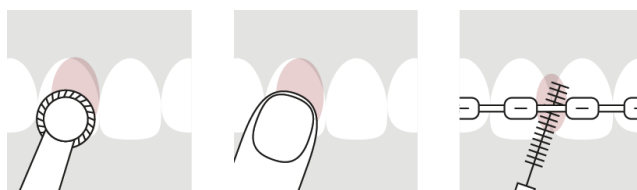
## HOW TO APPLY

### At the dental practice

The dental hygienist or dentist can apply using a rubber polishing cup, or microbrush.

### At home

Patients can apply with their finger or with an interdental brush. Use 1-2 times a week.



1. Jablonski-Momeni A et al. Sci Rep 2019;9:269 | 2. Soares R et al. J Clin Diagn Res 2017;11:ZC136-ZC141 | 3. Magalhães GAP et al. J Funct Biomater 2022;13:79.  
4. Bilge K, Kiliç V. Microsc Res Tech 2021;84:2206-2218 | 5. Data on file | \* 900 ppm of fluoride | \*\* Curadont Protect vs. casein phosphopeptide-amorphous calcium phosphate (CPP-ACPF), bioactive glass (BAG), and fluoride-enhanced hydroxyapatite (HA) gel | \*\*\* vs. 9000 ppm sodium fluoride

CURODONT™ D'SENZ

# Effective protection for sensitive teeth



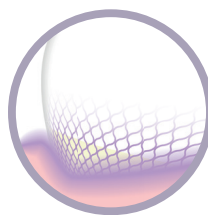
- Fast action gel
- Lasting efficacy
- Helps protect from sensitivity<sup>1</sup>
- Easily applicable for use in-office and at home
- Ideal before and after hygiene sessions, bleaching treatments and suitable for periodontal patients
- Topical format for quick, easy and versatile application on the go
- For all patients 6+ years

## MODE OF ACTION

CURODONT™ D'SENZ contains the P11-4 Oligo-Peptide formulation in the form of a matrix with a high affinity for dentin. Additionally enriched with calcium, phosphate, and fluoride, it creates a stable layer on the exposed dentin that effectively protects from tooth sensitivity.



Gum recession leaves dentine exposed, which causes sensitivity



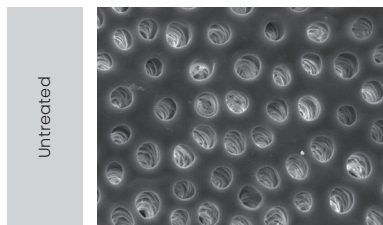
CURODONT™ D'SENZ creates a protective barrier on the sensitive areas of the tooth



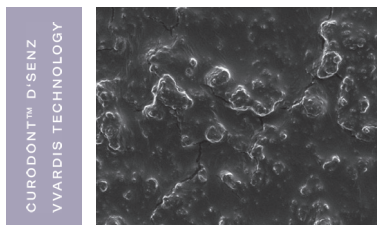
## VISIBLE RESULTS

CURODONT™ D'SENZ achieves an almost complete coverage of the dentinal tubules and shows a greater reduction in the number and diameter of open tubules in comparison to leading desensitising toothpastes.<sup>1</sup>

Scanning electron microscope images (2000x)<sup>2</sup>



Exposed dentine with open tubules



Dentine with CURODONT™ D'SENZ – a stable protective barrier created after just one application

## CLINICALLY TESTED

CURODONT™ D'SENZ helps quickly and effectively to protect from sensitivity:<sup>3</sup>

- 73% of participants reported relief after 3 days<sup>3</sup>
- Even after stopping application of CURODONT™ D'SENZ on day 7, it helped to prevent sensitivity for up to 90 days in 70% of participants<sup>3</sup>

## INDICATIONS

### Dentine hypersensitivity

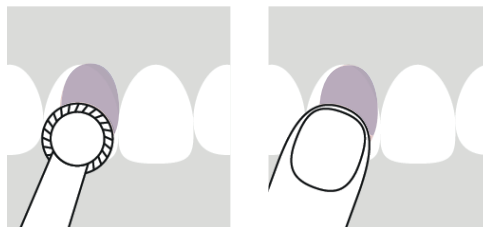
- Exposed roots
- Before and after hygiene appointments
- Before and after in-office and home bleaching<sup>4</sup>

## HOW TO APPLY

CURODONT™ D'SENZ can be used one to several times a day on sensitive sites.

### At the dental practice

The dental hygienist or dentist can apply using a rubber polishing cup.



### At Home

Patients can apply with their finger. Leave on for 1-2 minutes. Spit out residue if necessary.

## WHITE ENAMEL SERUM ALETSCH

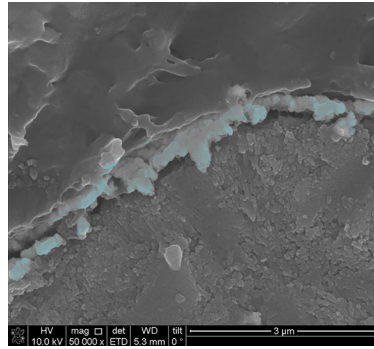
# A one-week intensive treatment for the enamel



- Biomimetic, patented P11-4 Hydroxya-Peptide formulation
- Gentle, healthy whitening effects without sensitivity or gum irritation
- Brightens and makes teeth tangibly smooth<sup>1</sup>
- Nourishes enamel and helps reduce post-bleaching side-effects:
  - Remineralizes and rehardens enamel<sup>2,3</sup>
  - Replenishes calcium and phosphate ions<sup>2,3</sup>
  - Helps to protect from sensitivity<sup>4</sup>
  - Decreases surface roughness<sup>2,3</sup>
- Boosts and protects the effect of a whitening treatment<sup>1,5</sup>
- Suitable for all patients

## MODE OF ACTION

The clinically proven vVARDIS technology, in the form of a peptide-matrix, has a high affinity to enamel. In combination with hydroxyapatite, it creates a stable, hydroxyapatite-rich layer on the tooth surface<sup>6</sup> that brightens and gently whitens enamel by diffuse reflection of light.



Embedding resin

vVARDIS Serum







Enamel

## USES

- 1. Post whitening enamel care:** Premium nourishment and protection of enamel. Enhances & prolongs whitening results providing a noticeably smooth, shiny feel.
- 2. In between whitening treatments:** As whitening requires a recovery period before re-treatment, the serum serves as an ideal maintenance agent to preserve and enhance results.
- 3. Non-peroxide aesthetic enhancement:** for those who prefer not to or are unable to use peroxide.
- 4. Premium treatment enhancer:** Enhances the results of smile-makeovers and other aesthetic treatments.
- 5. During aligner treatments:** Used alongside aligner treatments, the peptide technology gently whitens and improves the aesthetics and feel of the teeth, while remineralizing enamel as such providing necessary protection from caries with aligners in place.

## SIMPLE APPLICATION

Aletsch can be applied by the dental hygienist or dentist in the dental office following bleaching, or at home by the patient, as below.

-  For best results, use just before bedtime.
-  Using the included applicator brush, apply a thick layer of White Enamel Serum to each tooth (included porcelain crowns and veneers), extending the gel over your gum line.
-  Avoid eating or drinking for at least 30 minutes after application.
-  After brushing, use your fingers to gently draw back your lips to reveal your teeth. Lightly dry your teeth with a soft cloth.
-  After applying, keep your lips open for 10-15 seconds. For maximum benefit, don't rinse the White Enamel Serum from your teeth and gums.
-  Apply the White Enamel Serum for a week and repeat treatment after 1-3 months to maintain results.

Leave on for 10 minutes. Spit out residue if necessary. Avoid eating or drinking for at least 30 minutes.

For More Inquiries, Do Not Hesitate to Contact  
the Authoritative Agent in Bahrain