Research Report

Regeneration with CURODONT™ REPAIR Monitored by caries detection systems

Publication 1

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Publication 2

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SWISS MADE

CURODONT™ REPAIR

Regeneration with CURODONT™ REPAIR Monitored by caries detection systems

Publication 1

Efficacy of the self-assembling peptide P11-4 in constructing a remineralization scaffold on artificially-induced enamel lesions on smooth surfaces.

Publication 2

In Vitro Detection of Remineralisation of Early Caries Using CURODONT™ REPAIR with The Canary System®.

Summary

The papers evaluated the regression of caries treated with CURODONT™ REPAIR and monitored the changes with various caries detection mechanisms.

Publication 1: Measured the changes of artificial carious lesions with DIAGNOdent and VistaProof.

Publication 2: Measured the regression of natural carious lesions with The Canary System®.

Material and Methods

Lesion Type

Publication 1: Artificial lesions
Publication 2: Natural carious lesions (non-cavitated)

Caries Detection

Publication 1: DIAGNOdent & VistaProof (84 days follow-up)
Publication 2: The Canary System®, The Canary Lab (50 days follow-up)

Controls

Publication 1: No treatment; CURODONT™ REPAIR treated and stored in distilled water.
Publication 2: No treatment & sham application (NaOCl & Etching); Internal specimen control by using sound and carious enamel on each tooth

Validation

Publication 1: Electron microscopy
Publication 2: Polarised light microscopy

Studydesign

In vitro experiments performed on extracted teeth

Diagnostic

Publication 1:
DIAGNOdent; VistaProof; Scanning electron microscopy

Publication 2:
The Canary System®; The Canary Lab; Polarised light microscopy

Conclusion

- The regeneration of the enamel due to the treatment of CURODONT™ REPAIR can be monitored by DIAGNOdent, VistaProof, The Canary System® and The Canary Lab
- Acid Etching and application of Sodium Hypochloride did not result in regeneration of the enamel.
- CURODONT™ REPAIR without the presence of saliva did not result in regeneration of the enamel.

Literature

[1)] Jablonski-Momeni, A. and M. Heinzel-Gutenbrunner (2014). „Efficacy of the self-assembling peptide P11-4 in constructing a remineralization scaffold on artificially-induced enamel lesions on smooth surfaces.“ J Orofac Orthop.; 75: 1-15

[2)] Wong, B., et al. (2014). In Vitro detection of Remineralisation of Early Caries Using Curodont(TM) Repair with The Canary System(R). ORCA Greifswald, Germany; Abstract #52

- www.credentis.com; www.curodont.com

Result

Publication 1: DIAGNOdent

Table 2: Crosstabs of the series of measurements for the DIAGNOdent (DD)

	Time: t1			Time: t2			Time: t3		
	Sound-Healthy [a]	Enamel lesion [b]	Total	Sound-Healthy [a]	Enamel lesion [b]	Total	Sound-Healthy [a]	Enamel lesion [b]	Total
Test group	21	9	30	24	6	30	28	2	30
Control groups 1 & 2, 2 & 2	6	4	10	1	9	10	2	8	10
Total	27	13	40	25	15	40	30	10	40
X^2 test [c]	p=0.414			**p< 0.001**			**p< 0.001**		

[a] DD values 0–7
[b] DD values 8–24
[c] Significant differences within the groups are printed in bold

The artificial caries lesions treated with CURODONT™ REPAIR showed significantly higher reduction in caries than the control groups as indicated by DIAGNOdent and VistaProof.

Publication 1: VistaProof

Table 3: Crosstabs of the series of measurements for the VistaProof (VP)

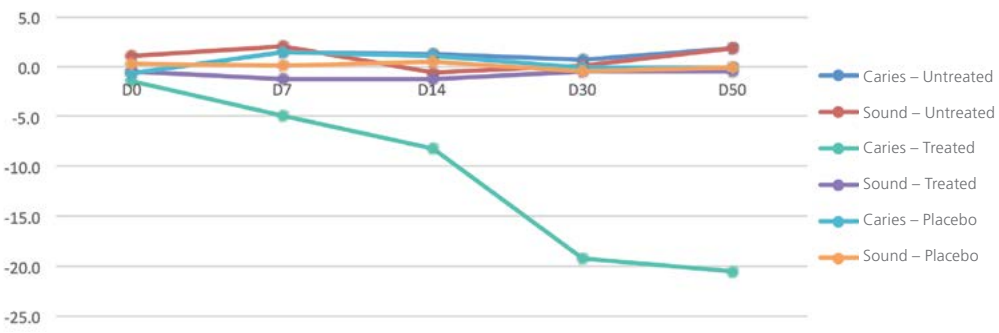
	Time: t1			Time: t2			Time: t3		
	Sound [a]	Enamel lesion [b]	Total	Sound [a]	Enamel lesion [b]	Total	Sound [a]	Enamel lesion [b]	Total
Test group	19	10	29	27	1	28	27	0	27
Control	4	6	10	5	3	8	6	3	9
Total	23	16	39	32	4	36	33	30	40
X^2 test [c]	p=0.414			**p< 0.001**			**p< 0.001**		

[a] VP values up to 1
[b] VP values > 1
[c] Significant differences within the groups are printed in bold

The remineralisation supported by CURODONT™ REPAIR can be followed with standard caries diagnostics.

Publication 2: The Canary System

Change in Canary Number



The carious lesions treated with CURODONT™ REPAIR (green line) was the only group that changed significantly throughout the 50 days observation period.