APPENDIX A

LIST OF MATERIALS USED AND CITED IN THIS STUDY

MATERIAL	BRAND	MANUFACTURER
Nanohybrid composite	Grandio	VOCO, Cuxhaven, Germany
34.5% phosphoric acid gel	Vococid	VOCO, Cuxhaven, Germany
Bonding agent	Solobond M	VOCO, Cuxhaven, Germany
Clear cervical matrix strip	Swindow	Dental products Ltd, , Wiltshire, U.K
Sof-lex discs	Sof-lex Discs	3M Dental Products, St Paul ,USA
Medium filter paper	Whatman	Whatman®, England
Hydroxyethyecellulose	ALDRICH	ALDRICH®, Germany
Lactic acid	MERK	MERK®-Schuchardt, Germany
NaOH (pellets)	HmbG	HmbG Chemicals, Germany
Commercial nail varnish	Florella	Florelle, Italy
Clear self curing epoxy resin	Mirapox	Miracon, Malaysia
Die stone	Densite	Shufo, Japan

APPENDIX B

LIST OF EQUIPMENTS AND INSTRUMENTS USED AND CITED IN THIS STUDY

EQUIPMENTS/ INSTRUMENTS	DISCRIPTION	MANUFACTRER
Stereomicroscope		Kyowa optical, Japan
Light curing unit	Composite curing	Spectrum800, DENSPLY®, Caulk, U.S.A
Vacuum pump	provided additional force to obtain a pure liquid separation during filter procedure	Pump, VCP 8101, Taiwan
pH meter	pH measurement	HANNA instruments, Singapore
Isomet low speed saw	Sectioning machine	BUEHLER® Isomet low speed saw, U.S.A
Grinder and polishing machine	Grinding and polishing	Struers rotopol-1, Copenhagen, Denmark
Memmert Oven	Incubator	Memmert GmbH & Co. KG, Germany
Micrometer	Thickness measurements	Mitotoyo, Japan
Light transmitted microscope mounted with polarized glass	Caries like lesion evaluation	Nikon Eclipse E400, Japan
Image analyzer software system	Demineralization depth measurements	Image-Pro, Version 4.5, Media Cybernetics, L.P, Maryland, U.S.A

APPENDIX C

STATISTICAL ANALYSIS OUTPUT

Table 1: Skewness and Kurtosis Values of the Dependent Variables for the Different Levels of the I

Restoration Interface				
	Coronal Outer Lesion Depth	Coronal Wall Lesion Depth	Cervical Outer Lesion Depth	Cervical Wall Lesion Depth
acid gel				
Skewness	.317	-.069	.373	.095
Kurtosis	-1.125	-.444	-.316	-.981
10%qat extract				
Skewness	.973	.253	1.519	-.565
Kurtosis	-.227	-2.032	1.168	-1.543
20%qat extract				
Skewness	1.668	.687	1.441	.739
Kurtosis	2.755	1.334	1.972	.269

Table 2 Box's M Test

Box's Test of Equality of Covariance Matrices[a]

Box's M	54.528
F	2.014
df1	20
df2	1839.856
Sig.	.005

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept+solution

Table 3 Multivariate Test

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.934	70.545[b]	4.000	20.000	.000	.934
	Wilks' Lambda	.066	70.545[b]	4.000	20.000	.000	.934
	Hotelling's Trace	14.109	70.545[b]	4.000	20.000	.000	.934
	Roy's Largest Root	14.109	70.545[b]	4.000	20.000	.000	.934
solution	Pillai's Trace	.955	4.799	8.000	42.000	.000	.478
	Wilks' Lambda	.208	5.973[b]	8.000	40.000	.000	.544
	Hotelling's Trace	3.032	7.201	8.000	38.000	.000	.603
	Roy's Largest Root	2.746	14.419[c]	4.000	21.000	.000	.733

a. Computed using alpha = .05

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Design: Intercept+solution

Table 5.4 Levene's Test of Equality of error Variances

	F	df1	df2	Sig.
Coronal outer lesion	11.034	2	23	.000
Coronal wall lesion	6.124	2	23	.007
Cervical outer lesion	6.495	2	23	.006
Cervical wall lesion	1.316	2	23	.288

Table 5 Levene's Test of Equality of error Variances

F	df1	df2	Sig.
2.734	5	52	.029

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a Design: Intercept+solution+Location+solution * Location

Table 6 Comparison between groups using Dunett T3

Dependent Variable	(I) solution	(J) solution	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Coronal Outer Lesion	acid gel	10% qat extract	199.0443(*)	.008	57.9249	340.1637
		20%qat extract	166.5778(*)	.022	25.0420	308.1136
	10% qat extract	acid gel	-199.0443(*)	.008	-340.1637	-57.9249
		20%qat extract	-32.4665	.120	-71.8405	6.9074
	20%qat extract	acid gel	-166.5778(*)	.022	-308.1136	-25.0420
		10% qat extract	32.4665	.120	-6.9074	71.8405
Coronal Wall Lesion	acid gel	10% qat extract	76.9202	.480	-77.9232	231.7636
		20%qat extract	137.3072(*)	.026	16.5626	258.0519
	10% qat extract	acid gel	-76.9202	.480	-231.7636	77.9232
		20%qat extract	60.3870	.473	-68.1149	188.8889
	20%qat extract	acid gel	-137.3072(*)	.026	-258.0519	-16.5626
		10% qat extract	-60.3870	.473	-188.8889	68.1149
Cervical Outer Lesion	acid gel	10% qat extract	187.2563(*)	.001	90.0810	284.4316
		20%qat extract	151.7439(*)	.004	53.2228	250.2650
	10% qat extract	acid gel	-187.2563(*)	.001	-284.4316	-90.0810
		20%qat extract	-35.5124	.087	-75.4200	4.3952
	20%qat extract	acid gel	-151.7439(*)	.004	-250.2650	-53.2228
		10% qat extract	35.5124	.087	-4.3952	75.4200
Cervical Wall Lesion	acid gel	10% qat extract	93.8225	.203	-37.6005	225.2455
		20%qat extract	157.5356(*)	.005	49.1841	265.8871
	10% qat extract	acid gel	-93.8225	.203	-225.2455	37.6005
		20%qat extract	63.7131	.361	-49.6112	177.0373
	20%qat extract	acid gel	-157.5356(*)	.005	-265.8871	-49.1841
		10% qat extract	-63.7131	.361	-177.0373	49.6112

Table 5.7 Multiple Pairwise Comparison Using the Dunnett T3 Test

	(I) solution	(J) solution	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dunnett T3	acid gel	10% qat extract	88.9619(*)	.046	1.1146	176.8091
		20%qat extract	136.8342(*)	.000	61.6082	212.0602
	10% qat extract	acid gel	-88.9619(*)	.046	-176.8091	-1.1146
		20%qat extract	47.8723	.301	-26.2974	122.0421
	20%qat extract	acid gel	-136.8342(*)	.000	-212.0602	-61.6082
		10% qat extract	-47.8723	.301	-122.0421	26.2974

Based on observed means.

* The mean difference is significant at the .05 level.

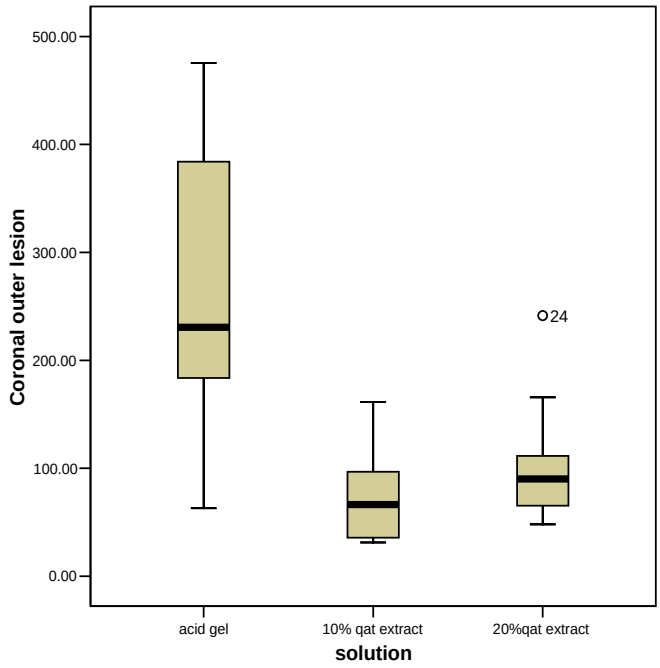

Figure 1 The Boxplots of Coronal Outer Lesion Depth for the Three Groups

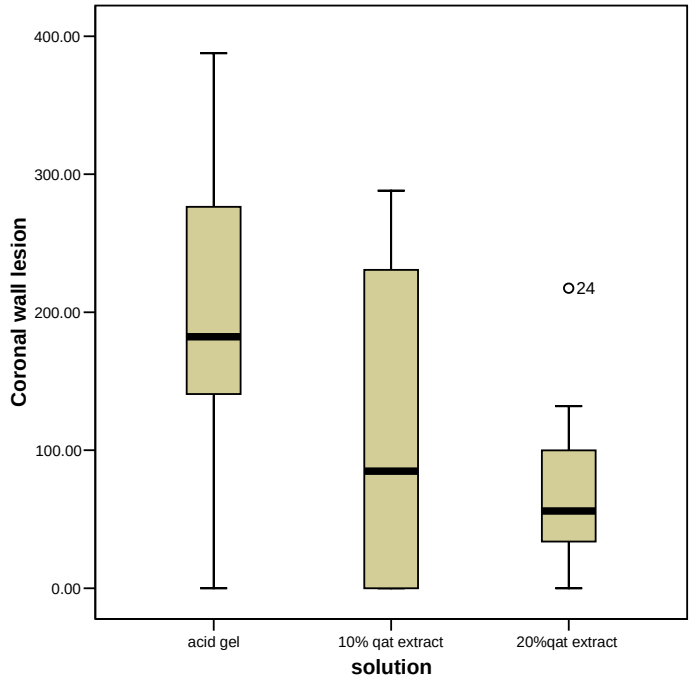

Figure 2 Boxplots of Coronal Wall Lesion Depth for the Three Groups

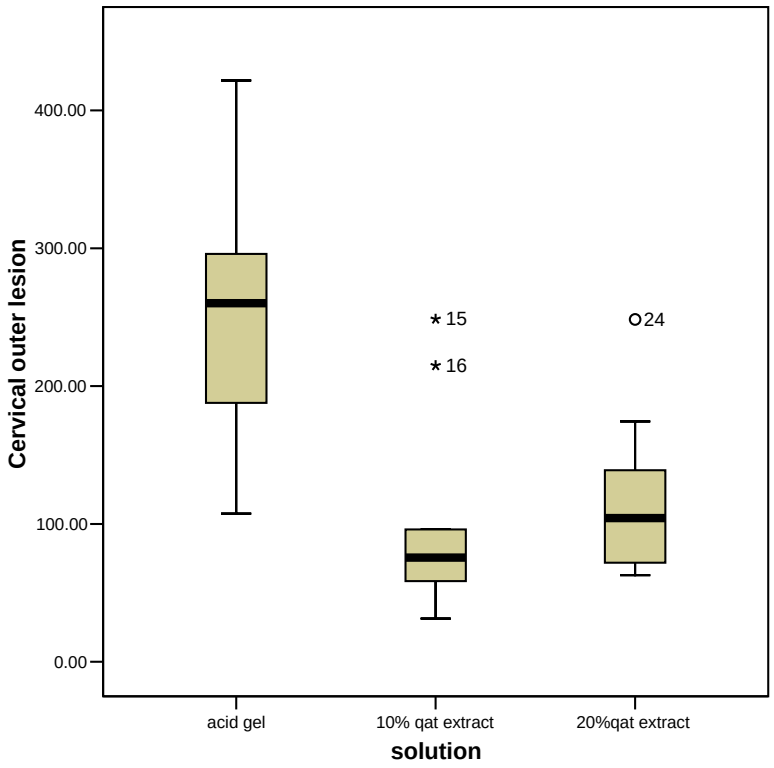

Figure 3 Boxplots of Cervical Outer Lesion Depth for the Three Group

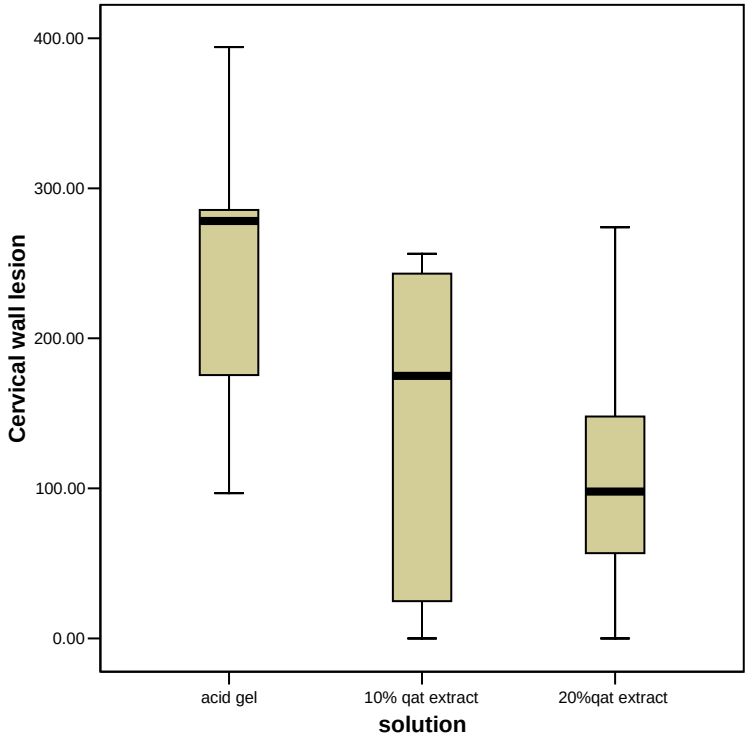

Figure 4 Boxplots of Cervical Wall Lesion Depth for the Three Groups