Table S1. Mutations detected in HPV16 E6, E7, and L1 genes in the study population.

Gene	Nucleic Acid / Amino Acid Mutations	Freq (%)	
		Mutation (A0/A1)	Wild Type (A1/A1)
E6	**109 T -> C**	5(10.6)	42(89.4)
	132 G -> T / R10I	4(8.5)	43(91.5)
	143 C -> G	8(17)	39(83)
	145 G -> T	26(55.3)	21(44.7)
	143 C -> G and 145 G-> T / Q14D	8(17)	39(83)
	145 G-> T / Q14H	15(31.9)	32(68.1)
	173 C -> A / H24N	1(2.1)	46(97.9)
	176 G -> T / D25Y	1(2.1)	46(97.1)
	178 T -> G / D25E	2(4.3)	45(95.7)
	183 T -> G / I27R	1(2.1)	46(97.5)
	195 T -> C / V31A	1(2.1)	46(97.5)
	285 C -> G / A61G	1(2.1)	46(97.5)
	286 T -> A	27(57.4)	20(42.6)
	289 A -> G	27(57.4)	20(42.6)
	295 T -> G / D64E	1(2.1)	46(97.5)
	335 C -> T / H78Y	27(57.4)	20(42.6)
	350 T -> G / L83V	27(57.4)	20(42.6)
	403 A -> G	5(10.6)	42(89.4)
	533 A -> G	5(10.6)	42(89.4)
E7	**645 A ->C / L28F**	1(1.92)	51(98.08)
	647 A ->G / N29S	8(15.38)	44(84.62)
	666 G -> A	1(1.92)	51(98.08)
	732 T->C	5(9.62)	47(90.38)
	735 T -> C	11 (21.15)	41(78.85)
	789 T -> C	29(55.77)	23(44.23)
	795 T -> G	29(55.77)	23(44.23)
	795 T -> C	1(1.92)	51(98.08)
	822 A -> G	1(1.92)	51(98.08)
	843 T -> C	1(1.92)	51(98.08)
	846 T -> C	2(3.85)	50(96.15)
L1	**5659 T -> C**	1(1.96)	50(98.04)
	5698 G -> A	29 (56.86)	22(43.14)
	5791 T -> C	2(3.92)	49(96.08)
	5796 A -> C / K53T	1(1.96)	50(98.04)
	5797 A -> C / K53N	1(1.96)	50(98.04)

	5797 A -> G	1(1.96)	50(98.04)
	5864 C -> T /H76Y	29 (56.86)	22(43.14)
	5911 T -> C	29 (56.86)	22(43.14)
	5962 T -> C	1(1.96)	50(98.04)
	6001 T -> G	1(1.96)	50(98.04)
	6016 G -> A	1(1.96)	50(98.04)
	6025 A -> C	1(1.96)	50(98.04)
	6061 G -> A	1(1.96)	50(98.04)
	6070 A -> G	1(1.96)	50(98.04)
	6165 C -> A / T176N	28(54.90)	23(45.10)
	6180 A -> G / N181S	3 (5.88)	48 (94.12)
	6180 A -> C/ N181T	5 (9.80)	46 (90.20)
	6218 G -> A/ V194I	1(1.96)	50(98.04)
	6247 T -> C	28(54.90)	23(45.10)
	6316 A -> G	24 (47.06)	27 (52.94)
	6391 A -> G	1(1.96)	50(98.04)
	6434 A -> G / T266A	41 (80.39)	10 (19.61)
	6482 T -> C / S282P	8 (15.69)	43 (84.31)
	6559 C -> T	26 (50.98)	25 (49.02)
	6568 T -> A	1(1.96)	50(98.04)
	6583 A -> C	2(3.92)	49(96.08)
	6689 T -> G / S351A	1(1.96)	50(98.04)
	6695 A -> C / T353P	12 (23.53)	39 (76.47)
	6721 G -> A	12 (23.53)	39 (76.47)
	6732 G -> C / R365P	1(1.96)	50(98.04)
	6803 A-> T / T389S	1(1.96)	50(98.04)
	6824 T -> C/ S396P	1(1.96)	50(98.04)
	6826 C -> T	1(1.96)	50(98.04)
	6854 C -> T	12 (23.53)	39 (76.47)
	6865 C -> T	12 (23.53)	39 (76.47)
	6868 A -> G	1(1.96)	50(98.04)
	6952 A -> G	1(1.96)	50(98.04)
	6967 A -> C / K443N	1(1.96)	50(98.04)
	6970 C -> T	11(21.57)	40 (78.43)
	6994 G -> A	10 (19.61)	41 (80.39)
	7060 G -> A	3 (5.88)	48 (94.12)
	7060 G ->T / L474F	10 (19.61)	41 (80.39)

Table S2. Cervical Cancer association with HPV16 E6 mutations observed in the Saudi population.

Nucleic Acid / Amino Acid Mutations (Positive)	**Freq (%)**		**OR (95%, CI)**	***Fisher exact test, P-Value***
	Cervical Cancer	**Non-cervical cancer**		
109 T -> C (N=5)	4(80)	1(20)	0.7(0.06-7.22)	1
132 G -> T / R10I (N=4)	3(75)	1(25)	0.5(0.04-5.65)	0.49
143 C -> G (N=8)	2(25)	6(75)	0.47(0.07-2.91)	0.59
145 G -> T (N=26)	2(7.6)	24(92.4)	3.6(0.65-19.8)	0.24
143 C -> G and 145 G-> T / Q14D	6(75)	2(25)	0.47(0.07-2.91)	0.59
145 G-> T / Q14H (N=15)	15(100)	0(0)	0.78(0.66-0.92)	0.087
173 C -> A / H24N (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
176 G -> T / D25Y0(N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
178 T -> G / D25E (N=2)	1(50)	1(50)	0.16(0.01-2.9)	0.29
183 T -> G / I27R (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
195 T -> C / V31A (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
285 C -> G / A61G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
286 T -> A (N=27)	25(92.6)	2(7.4)	3.94(0.71-21.8)	0.134
289 A -> G (N=27)	25(92.6)	2(7.4)	3.94(0.71-21.8)	0.134
295 T -> G / D64E (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
335 C -> T / H78Y (N=27)	25(92.6)	2(7.4)	3.94(0.71-21.8)	0.134
350 T -> G / L83V (N=27)	26(96.3)	1(3.7)	10.1(1.1-89.4)	0.022*
403 A -> G (N=5)	4(80)	1(20)	0.7(0.07-7.2)	1
533 A -> G (N=5)	5(100)	0(0)	0.82(.72-0.94)	1

Table S3. Cervical Cancer association with HPV16 E7 mutations observed in the Saudi population.

Nucleic Acid / Amino Acid Mutations (Positive)	**Freq (%)**		**OR (95%, CI)**	***Fisher exact test P-Value***
	Cervical Cancer	**Noncervical cancer**		
645 A ->C / L28F (N=1)	0(0)	1(100)	0.14(0.07-0.27)	0.1538
647 A ->G / N29S (N=8)	5(62.5)	3(37.5)	0.21(0.04-1.18)	0.094
666 G -> A (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
732 T->C (N=5)	5(100)	0(0)	0.84(0.74-0.94)	1
735 T -> C (N=11)	11(100)	0(0)	0.80(0.69—0.93)	0.18
789 T -> C (N=29)	27(93.1)	2(6.9)	4.8(0.86-26.4)	0.12
795 T -> G (N=29)	27(93.1)	2(5.9)	4.8(0.86-26.4)	0.12
795 T -> C (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
822 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
843 T -> C (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
846 T -> C (N=2)	1(50)	1 (50)	0.16(0.01-2.91)	0.29

Table S4. Cervical Cancer association with HPV16 L1 mutations observed in the Saudi population.

Nucleic Acid / Amino Acid Mutations (Positive)	Freq (%)		OR (95%, CI)	*Fisher exact test P-Value*
	Cervical Cancer	**Noncervical cancer**		
5659 T -> C (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
5698 G -> A (N=29)	27(93.1)	2(6.9)	4.8(0.86-26.4)	0.12
5791 T -> C (N=2)	2(100)	0(0)	0.84(0.74-0.94)	1
5796 A -> C / K53T (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
5797 A -> C / K53N (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
5797 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
5864 C -> T /H76Y (N=29)	27(93.1)	2(6.9)	4.8(0.86-26.4)	0.12
5911 T -> C (N=29)	27(93.1)	2(6.9)	4.8(0.86-26.4)	0.12
5962 T -> C (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6001 T -> G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6016 G -> A (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6025 A -> C (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6061 G -> A (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6070 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6165 C -> A / T176N (N=28)	26(92.9)	2(7.1)	4.3(0.78-23.9)	0.123
6180 A -> G / N181S (N=3)	2(66.7)	1(33.3)	0.33(0.026-4.2)	0.40
6180 A -> C/ N181T (N=5)	5(100)	0(0)	0.82(0.72-0.94)	1
6218 G -> A/ V194I (N=1, UNK)	NA	NA	NA	NA
6247 T -> C (N=28)	26(92.9)	2(7.14)	4.3(0.78-23.9)	0.123
6316 A -> G (N=24)	22(91.7)	2(8.3)	3(0.54-16.5)	0.26
6391 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.94)	1
6434 A -> G / T266A (N=40)	36(90)	4(10)	4.5(0.92-21.9)	0.072

6482 T -> C / S282P (N=8)	6(75)	2(25)	0.47(0.07-2.9)	0.59
6559 C -> T (N=26)	24(92.3)	2(7.7)	3.6(0.65-19.8)	0.24
6568 T -> A (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6583 A -> C (N=2)	2(100)	0(0)	0.84(0.74-0.95)	1
6689 T -> G / S351A (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6695 A -> C / T353P (N=12)	11(92.7)	1(8.3)	2.3(0.26-21.1)	0.66
6721 G -> A (N=12)	11(92.7)	1(8.3)	2.3(0.26-21.1)	0.66
6732 G -> C / R365P (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6803 A-> T / T389S (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6824 T -> C/ S396P (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6826 C -> T (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6854 C -> T (N=12)	11(92.7)	1(8.3)	2.3(0.26-21.1)	0.66
6865 C -> T (N=12)	11(92.7)	1(8.3)	2.3(0.26-21.1)	0.66
6868 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6952 A -> G (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6967 A -> C / K443N (N=1)	1(100)	0(0)	0.84(0.74-0.95)	1
6970 C -> T (N=11)	10(90.9)	1(9.1)	2.1(0.25-18.8)	1
6994 G -> A (N=10)	9(90)	1(10)	1.8(0.19-16.6)	1
7060 G -> A (N=3)	2(66.7)	1(33.3)	0.3(0.02-4.18)	0.40
7060 G ->T / L474F (N=10)	9(90)	1(10)	1.8(0.19-16.6)	1

Table S5. HPV 16 E6 mutations distributed by histology, cytology and SCC grades.

	A) Histology (AA0/AA), Mutation N/ Wild Type N					
E6 Mutations	**CIN 1**	**CIN 2**	**CIN 3**	**Invasive Carcinoma**	**NILE**	**X^2, P value**
109 T -> C	0/1	0/3	2/13	1/13	0/2	1.03(0.91)
132 G -> T / R10I	0/1	0/3	2/13	0/14	0/2	2.82(0.58)
143 C -> G	0/1	0/3	3/12	1/13	0/2	2.1(0.71)
145 G -> T	0/1	1/2	8/7	8/6	0/2	3.7(0.45)
143 C -> G and 145 G-> T / Q14D	0/1	0/3	3/12	1/13	0/2	2.1(0.71)
145 G-> T / Q14H	0/1	1/2	2/13	7/7	0/2	6.1(0.19)
173 C -> A / H24N	0/1	0/3	1/14	0/14	0/2	1.37(0.84)
176 G -> T / D25Y	0/1	0/3	0/15	0/14	0/2	NA
178 T -> G / D25E	0/1	0/3	0/15	0/14	0/2	NA
183 T -> G / I27R	0/1	0/3	1/14	0/14	0/2	1.37(0.84)
195 T -> C / V31A	0/1	0/3	0/15	0/14	0/2	NA
285 C -> G / A61G	0/1	0/3	1/14	0/14	0/2	1.37(0.84)
286 T -> A	0/1	1/2	8/7	9/5	0/2	4.5(0.34)
289 A -> G	0/1	1/2	8/7	9/5	0/2	4.5(0.34)
295 T -> G / D64E	0/1	0/3	0/15`	1/13	0/2	1.5(0.82)
335 C -> T / H78Y	0/1	1/2	8/7	9/5	0/2	4.5(0.34)
350 T -> G / L83V	0/1	1/2	9/6	10/4	0/2	5.9(0.21)
403 A -> G	0/1	0/3	2/13	1/13	0/2	1.03(0.90)
533 A -> G	0/1	0/3	2/13	2/12	0/2	0.94(0.91)

	B) Cytology Test (AA0/AA), Mutation N/ Wild Type N			
E6 Mutations	**HSIL**	**Invasive Carcinoma**	**NILE**	**X^2, P value**
109 T -> C	2/9	1/28	0/3	2.9(0.23)
132 G -> T / R10I	2/9	1/28	0/3	6.1(0.047) *

143 C -> G	3/8	3/26	0/3	2.4(0.29)
145 G -> T	5/6	16/13	0/3	3.4(0.18)
143 C -> G and 145 G-> T / Q14D	3/8	3/26	0/3	2.43(0.30)
145 G-> T / Q14H	1/10	12/17	0/3	5.3(0.069)
173 C -> A / H24N	1/10	0/29	0/3	2.9(0.22)
176 G -> T / D25Y	0/11	1/28	0/3	0.49(0.78)
178 T -> G / D25E	1/10	1/28	0/3	1.72(0.69)
183 T -> G / I27R	1/10	0/29	0/3	2.9(0.22)
195 T -> C / V31A	0/11	1/28	0/3	0.49(0.78)
285 C -> G / A61G	0/11	0/29	0/3	NA
286 T -> A	5/6	17/12	0/3	3.9(0.14)
289 A -> G	5/6	17/12	0/3	3.9(0.14)
295 T -> G / D64E	0/11	1/28	0/3	0.49(0.78)
335 C -> T / H78Y	6/5	17/12	0/3	3.9(0.14)
350 T -> G / L83V	4/7	18/11	0/3	5.5(0.064)
403 A -> G	2/9	1/28	0/3	2.9(0.23)
533 A -> G	2/9	3/26	0/3	0.90(0.63)
C) SCC Grades for mutations with intensive carcinoma				
E6 Mutations	**SCC**	**SCC Grade II**	**SCC Grade III**	**X^2, P value**
109 T -> C	0/16	1/9	0/3	1.9(0.37)
132 G -> T / R10I	0/16	0/10	0/3	NA
143 C -> G	1/15	1/9	1/2	1.9(0.37)
145 G -> T	7/9	7/3	3/0	4.1(0.13)
143 C -> G and 145 G-> T / Q14D	1/15	1/9	1/2	1.9(0.36)
145 G-> T / Q14H	5/11	6/4	2/1	2.7(0.25)

173 C -> A / H24N	0/16	0/10	0/3	NA
176 G -> T / D25Y	0/16	0/10	0/3	NA
178 T -> G / D25E	0/16	0/10	0/3	NA
183 T -> G / I27R	0/16	0/10	0/3	NA
195 T -> C / V31A	1/15	0/10	0/3	0.84(0.65)
285 C -> G / A61G	0/16	0/10	0/3	NA
286 T -> A	7/9	8/2	3/0	5.5(0.064)
289 A -> G	7/9	8/2	3/0	5.5(0.064)
295 T -> G / D64E	0/16	1/9	0/3	1.9(0.37)
335 C -> T / H78Y	9/7	8/2	3/0	5.5(0.065)
350 T -> G / L83V	9/7	7/3	2/1	0.52(0.77)
403 A -> G	0/16	1/9	0/3	1.9(0.37)
533 A -> G	2/14	2/8	0/3	0.82(0.66)

Table S6. HPV 16 E7 mutations distributed by histology, cytology and SCC grades.

	A) Histology (AA0/AA), Mutation N/ Wild Type N					
E7 Mutations	**CIN 1**	**CIN 2**	**CIN 3**	**Invasive Carcinoma**	**NILE**	**X^2, P value**
645 A ->C / L28F	0/1	0/3	0/15	0/14	0/2	35(<0.0001) *
647 A ->G / N29S	0/1	0/3	3/12	1/13	0/2	2.1(0.71)
666 G -> A	0/1	0/3	0/15	1/13	0/2	1.54(0.81)
732 T->C	0/1	0/3	2/13	2/12	0/2	0.94(0.92)
735 T -> C	0/1	1/2	2/13	3/11	0/2	1.50(0.82)
789 T -> C	0/1	2/1	8/7	9/5	0/2	4.3(0.37)
795 T -> G	0/1	2/1	8/7	9/5	0/2	4.3(0.37)
795 T -> C	0/1	1/2	0/15	0/14	0/2	10.9(0.027) *
822 A -> G	0/1	0/3	0/15	1/13	0/2	1.5(0.82)

843 T -> C	0/1	0/3	0/15	0/14	0/2	NA
846 T -> C	0/1	0/3	0/15	0/14	0/2	NA
	B) Cytology Test (AA0/AA), Mutation N/ Wild Type N					
E7 Mutations	**HSIL**		**Invasive Carcinoma**	**NIEL**		**X^2, P value**
645 A ->C / L28F	0/11		0/29	0/3		NA
647 A ->G / N29S	4/7		3/26	0/3		4.6(0.10)
666 G -> A	0/11		1/28	0/3		0.49(0.78)
732 T->C	2/9		3/26	0/3		0.90(0.64)
735 T -> C	0/11		9/20	0/3		5.5(0.064)
789 T -> C	6/5		19/10	0/3		4.9(0.088)
795 T -> G	6/5		19/10	0/3		4.9(0.088)
795 T -> C	0/11		1/28	0/3		0.5(0.78)
822 A -> G	0/11		0/29	0/3		NA
843 T -> C	0/11		1/28	0/3		0.50(0.78)
846 T -> C	1/10		1/28	0/3		0.72(0.69)
	SCC Classification					
E7 Mutations	**SCC**		**SCC Grade I**	**SCC Grade II**		**X^2, P value**
645 A ->C / L28F	0/16		0/10	0/3		NA
647 A ->G / N29S	1/15		1/9	0/3		0.38(0.82)
666 G -> A	0/16		1/9	0/3		1.96(0.37)
732 T->C	2/14		2/8	0/3		0.82(0.67)
735 T -> C	5/11		3/7	1/2		0.01(0.99)
789 T -> C	9/7		8/2	3/0		3.1(0.20)
795 T -> G	9/7		8/2	3/0		3.1(0.20)
795 T -> C	1/15		0/10	0/3		0.84(0.65)
822 A -> G	0/16		0/10	0/3		NA
843 T -> C	0/16		0/10	0/3		NA

846 T -> C	0/16	0/10	0/3	NA

Table S7. HPV 16 L1 mutations distributed by histology, cytology and SCC grades.

	A) Histology (AA0/AA), Mutation N/ Wild Type N					
L1 Mutations	**CIN 1**	**CIN 2**	**CIN 3**	**Invasive Carcinoma**	**NILE**	**X^2, P value**
5659 T -> C	0/1	0/3	0/15	1/13	0/2	1.54(0.82)
5698 G -> A	0/1	2/1	5/10	9/5	0/2	5.5(0.23)
5791 T -> C	0/1	0/3	1/14	1/13	0/2	0.44(0.97)
5796 A -> C / K53T	0/1	0/3	0/15	0/14	0/2	NA
5797 A -> C / K53N	0/1	0/3	0/15	0/14	0/2	NA
5797 A -> G	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
5864 C -> T /H76Y	0/1	1/2	10/5	9/5	0/2	5.5(0.23)
5911 T -> C	0/1	1/2	10/5	9/5	0/2	5.5(0.23)
5962 T -> C	0/1	0/3	0/15	0/14	0/2	NA
6001 T -> G	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6016 G -> A	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6025 A -> C	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
6061 G -> A	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6070 A -> G	0/1	0/3	0/15	0/14	0/2	NA
6165 C -> A / T176N	0/1	1/2	10/5	9/5	0/2	5.5(0.23)
6180 A -> G / N181S	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
6180 A -> C/ N181T	0/1	0/3	2/13	2/12	0/2	0.94(0.92)
6218 G -> A/ V194I	0/1	0/3	0/15	0/14	0/2	NA
6247 T -> C	0/1	1/2	10/5	9/5	0/2	5.5(0.23)
6316 A -> G	0/1	½	9/6	7/7	0/2	3.9(0.41)
6391 A -> G	0/1	0/3	0/15	1/13	1/13	1.5(0.82)

6434 A -> G / T266A	0/1	1/2	13/2	13/1	1/1	11.1(0.025) *
6482 T -> C / S282P	0/1	0/3	4/11	1/13	0/2	3.5(0.49)
6559 C -> T	0/1	1/2	7/8	9/5	0/2	4.5(0.34)
6568 T -> A	0/1	0/3	0/15	1/13	0/2	1.54(0.81)
6583 A -> C	0/1	0/3	2/13	0/14	0/2	2.8(0.59)
6689 T -> G / S351A	0/1	0/3	0/15	1/13	0/2	1.54(0.82)
6695 A -> C / T353P	0/1	1/2	1/14	6/8	0/2	6.5(0.16)
6721 G -> A	0/1	1/2	1/14	6/8	0/2	6.5(0.16)
6732 G -> C / R365P	0/1	0/3	0/15	0/14	0/2	NA
6803 A-> T / T389S	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6824 T -> C/ S396P	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6826 C -> T	0/1	0/3	0/15	1/13	0/2	1.5(0.82)
6854 C -> T	0/1	1/2	1/14	6/8	0/2	6.5(0.16)
6865 C -> T	0/1	1/2	1/14	6/8	0/2	6.5(0.16)
6868 A -> G	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
6952 A -> G	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
6967 A -> C / K443N	0/1	0/3	1/14	0/14	0/2	1.4(0.85)
6970 C -> T	0/1	0/3	1/14	6/8	0/2	7.7(0.10)
6994 G -> A	0/1	0/3	0/15	6/8	0/2	10.9(0.028) *
7060 G -> A	0/1	0/3	1/14	1/13	0/2	0.44(0.97)
7060 G ->T / L474F	0/1	0/3	0/15	6/8	0/2	10.9(0.028) *

	B) Cytology Test (AA0/AA), Mutation N/ Wild Type N			
L1 Mutations	**HSIL**	**Invasive Carcinoma**	**NIEL**	**X^2, P value**
5659 T -> C	0/11	1/28	0/3	0.49(0.78)
5698 G -> A	5/6	18/11	0/3	4.5(0.100)

5791 T -> C	1/10	1/28	0/3	0.72(0.69)
5796 A -> C / K53T	0/11	1/28	0/3	0.49(0.78)
5797 A -> C / K53N	0/11	1/28	0/3	0.49(0.78)
5797 A -> G	0/11	0/29	0/3	NA
5864 C -> T /H76Y	5/6	18/11	0/3	4.6(0.10)
5911 T -> C	5/6	18/11	0/3	4.6(0.10)
5962 T -> C	0/11	1/28	0/3	0.49(0.78)
6001 T -> G	0/11	1/28	0/3	0.49(0.78)
6016 G -> A	0/11	1/28	0/3	0.49(0.78)
6025 A -> C	1/10	0/29	0/3	2.9(0.22)
6061 G -> A	0/11	1/28	0/3	0.49(0.78)
6070 A -> G	0/11	1/28	0/3	0.49(0.78)
6165 C -> A / T176N	5/6	18/11	0/3	4.6(0.100)
6180 A -> G / N181S	1/10	1/28	0/3	0.30(0.86)
6180 A -> C/ N181T	1/0	3/26	0/3	0.34(0.84)
6218 G -> A/ V194I	0/11	0/29	1/2	13.7(0.001) *
6247 T -> C	5/6	18/11	0/3	4.6(0.100)
6316 A -> G	4/7	15/14	0/3	3.3(0.19)
6391 A -> G	0/11	0/29	0/3	NA
6434 A -> G / T266A	7/4	25/4	2/1	2.8(0.25)
6482 T -> C / S282P	3/8	4/25	0/3	1.7(0.42)
6559 C -> T	5/6	18/11	0/3	4.5(0.100)
6568 T -> A	0/11	0/29	0/3	0.49(0.78)
6583 A -> C	0/11	1/28	0/3	0.49(0.78)
6689 T -> G / S351A	0/11	1/28	0/3	0.49(0.78)
6695 A -> C / T353P	2/9	8/21	0/3	1.37(0.50)
6721 G -> A	2/9	8/21	0/3	1.37(0.50)

6732 G -> C / R365P	1/10	0/29	0/3	2.9(0.22)
6803 A-> T / T389S	1/10	0/29	0/3	2.9(0.22)
6824 T -> C/ S396P	1/10	0/29	0/3	2.9(0.22)
6826 C -> T	0/11	1/28	0/3	0.49(0.78)
6854 C -> T	2/9	8/21	0/3	1.37(0.50)
6865 C -> T	2/9	8/21	0/3	1.37(0.50)
6868 A -> G	0/11	1/28	0/3	0.49(0.78)
6952 A -> G	0/11	1/28	0/3	0.49(0.78)
6967 A -> C / K443N	0/11	1/28	0/3	0.49(0.78)
6970 C -> T	2/9	8/21	0/3	1.37(0.50)
6994 G -> A	2/9	8/21	0/3	1.37(0.50)
7060 G -> A	1/10	2/27	0/3	0.36(0.86)
7060 G ->T / L474F	2/9	8/21	0/3	1.37(0.50)

C) SCC Classifications (AA0/AA), Mutation N/ Wild Type N

L1 Mutations	**SCC**	**SCC Grade II**	**SCC Grade III**	**P Value**
5659 T -> C	0/16	1/9	0/3	1.96(0.37)
5698 G -> A	8/8	8/2	0/3	4.2(0.12)
5791 T -> C	0/16	1/9	0/3	1.96(0.37)
5796 A -> C / K53T	1/15	0/10	0/3	0.84(0.65)
5797 A -> C / K53N	1/15	0/10	0/3	0.84(0.65)
5797 A -> G	0/16	0/10	0/3	NA
5864 C -> T /H76Y	8/8	8/2	3/0	4.2(0.12)
5911 T -> C	8/8	8/2	3/0	4.2(0.12)
5962 T -> C	0/16	0/10	0/3	NA
6001 T -> G	0/16	1/9	0/3	1.96(0.37)
6016 G -> A	1/15	0/10	0/3	0.84(0.65)
6025 A -> C	0/16	0/10	0/3	NA

6061 G -> A	0/16	1/9	0/3	1.96(0.37)
6070 A -> G	1/15	0/10	0/3	0.84(0.65)
6165 C -> A / T176N	8/8	8/2	3/0	4.2(0.12)
6180 A -> G / N181S	1/15	0/10	1/2	4.0(0.13)
6180 A -> C/ N181T	2/14	2/8	0/3	0.82(0.66)
6218 G -> A/ V194I	0/16	0/10	0/3	NA
6247 T -> C	8/8	8/2	3/0	4.2(0.12)
6316 A -> G	6/10	6/4	3/0	4.4(0.11)
6391 A -> G	0/16	0/10	0/3	NA
6434 A -> G / T266A	12/4	9/1	3/0	1.7(0.43)
6482 T -> C / S282P	2/14	1/9	1/2	1.1(0.57)
6559 C -> T	8/8	8/2	3/0	4.2(0.12)
6568 T -> A	0/16	1/9	0/3	1.96(0.37)
6583 A -> C	1/15	0/10	0/3	0.84(0.65)
6689 T -> G / S351A	0/16	1/9	0/3	1.96(0.37)
6695 A -> C / T353P	3/13	3/7	3/0	7.8(0.02) *
6721 G -> A	3/13	3/7	3/0	7.8(0.02) *
6732 G -> C / R365P	1/15	0/10	0/3	0.84(0.65)
6803 A-> T / T389S	1/15	0/10	0/3	0.84(0.65)
6824 T -> C/ S396P	0/16	1/9	0/3	1.96(0.37)
6826 C -> T	0/16	1/9	0/3	1.96(0.37)
6854 C -> T	3/13	3/7	3/0	7.8(0.02) *
6865 C -> T	3/13	3/7	3/0	7.8(0.02)
6868 A -> G	1/15	0/10	0/3	0.84(0.65)
6952 A -> G	1/15	0/10	0/3	0.84(0.65)
6967 A -> C / K443N	1/15	0/10	0/3	0.84(0.65)
6970 C -> T	3/13	3/7	3/0	7.8(0.02)

6994 G -> A	3/13	3/7	3/0	7.8(0.02)
7060 G -> A	0/16	1/9	0/3	1.96(0.37)
7060 G ->T / L474F	3/13	3/7	3/0	7.8(0.02)