

Phospholipase

C- γ 1 p53

• *

=Abstract=

The Expression of Phospholipase C- γ 1 and p53 in Endometrial Carinoma

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PLC- γ 1 plays a central role in the signal transduction for cellular activity, such as proliferation and differentiation. However, the significance of their expressions in endometrial cancer is yet to be determined. The current study examined the expression prevalence of phospholipase C- γ 1(PLC- γ 1) , and studied its relationship with p53 expression in endometrial carcinomas of varying stages and grades.

Expressions of PLC- γ 1 and p53 were determined using immunohistochemical staining of paraffin embedded tissues from 21 endometrial specimens; Specimens included 10 cases of grade I, 8 cases of grade II, and 3 cases of grade III lesions.

While there were few PLC- γ 1 expressions in the control group, 60% (6/10) of grade I carcinomas showed obvious PLC- γ 1 expression, 50%, and 30% of Grade II and III cases did respectively. In addition, PLC- γ 1 expression was restricted to the tumor lesions and the intensity of the PLC- γ 1 was the strongest in well differentiated cancers. P53 expression was identified in 7 of 21 (33%) cases, and there was no relationship between PLC- γ 1 expression and p53 overexpression.

Our studies revealed that levels of PLC- γ 1 play important roles in the occurrence of endometrial carcinomas, though factors that might influence them still remain obscure. And also further studies about correlation between PLC- γ 1 and p53 are needed to elucidate that in tumorigenesis.

Keywords: PLC- γ 1, p53, immunohistochemistry, uterine endometrial carcinoma

I. p53 mRNA p53 mRNA p53 가

.6) p53 ,

가 .13)

가 .6) p53 p53

가 46) p53 2 .23) p53 p53

.78) 가 .2426) p53 가

cyclic AMP(cAMP) 2 .1011) 21 PLC- γ 1, p53

가 phosphoinositide-specific phospholipase C(PLC) ,

가 .11) (isozyme)가 II.

PLC PLC- γ 1 src 1. 1986 1996 21

가 .1213) 30 39

phospholipase C- γ 1(PLC- γ 1) .

, , 1416) 가 2 , 40 49 가 8 , 50 59 가 7 , 60

가 4 , (FIGO, clinical staging)

1 가 18 , 3 가 1 , 4 가 1 (Table 1).

.1720) p53 , , 2. 1) Phospholipase C- γ 1

.2122) 17 hematoxylin-eosin (H & E)

53 kDa (nuclear phosphoprotein) block 5 μ m

cycle G0 G1 .5) . PLC- γ 1 PLC- γ 1

Dako LSAB kit
Avidin-Biotin Complex . AEC
hematoxylin .

Table 1. Patient profile

Age (year)	stage I	stage II	stage III	stage IV	Total
30-39	2	0	0	0	2
40-49	7	0	0	1	8
50-59	7	0	0	0	7
60-69	2	0	1	0	3
70-79	0	0	0	1	1
Total	18	0	1	1	21

2) p53

PLC- γ 1

(incubation time)

(PLC- γ 1 monoclonal antibody; Pos-
tech Korea, p53 monoclonal antibody; Zymed Calif.,
USA).

3)

가

(+++), (++)

(+) , (-)

, p53

가 5%

, PLC- 1

III.

1. PLC- γ 1

PLC- γ 1
21 PLC- γ 1 11 (52%)
(Table 2).
PLC- γ 1 1 18 10
(56%), 3 1 0 (0%), 4 2
1 (50%) (Table 2)(Fig. 1).

Table 2. PLC- γ 1 expression according to clinical staging

Clinical stage	PLC- γ 1 expression				positive* (%)	Total
	-	+	++	+++		
	8	8	1	1	56(%)	18
	0	0	0	0	0(%)	0
	1	0	0	0	0(%)	1
	1	0	1	0	50(%)	2
Total	10	8	2	1	52(%)	21

*positive; PLC- 1 expression positive rate at immu-
nohistochemistry

Fig. 1. Positive immunoreactivity for PLC- γ 1 is seen
in well differentiated adenocarcinoma of endometrium
(Immunostain, X 100).

I 60%, II
가
(Table 3).

2. p53

21 7 (33%)
(Table 4,5) (Fig 2). 가 1 18

4, 3 1 1 (100%), 4
 2 2 (100%)
 (Table 4). I
 10 1 (10%), II 8 3
 (37%), III 3 3 (100%)
 (Table 5).

Table 3. PLC- γ 1 expression according to histologic grading

Histologic grade	PLC- γ 1 expression				positive*(%)	Total
	-	+	++	+++		
	4	5	0	1	60	10
	4	3	1	0	50	8
	2	0	1	0	33	3
Total	10	8	2	1	52	21

*positive; PLC- γ 1 expression positive rate at immunohistochemistry

Table 4. p53 expression according to clinical staging

Clinical stage	p53 expression				positive*(%)	Total
	-	+	++	+++		
	14	3	0	1	22(%)	18
	0	0	0	0	0(%)	0
	0	0	1	0	100(%)	1
	0	0	0	2	100(%)	2
Total	14	3	1	3	33(%)	21

*positive; p53 expression positive rate at immunohistochemistry

Table 5. p53 expression according to histologic grading

Histologic grade	p53 expression				positive*(%)	Total
	-	+	++	+++		
	9	1	0	0	10(%)	10
	5	1	1	1	37(%)	8
	0	1		2	100(%)	3
Total	14	3	1	3	67(%)	21

*positive; p53 expression positive rate at immunohistochemistry

Fig. 2. There's strong and diffuse staining of p53 in nuclei of poorly differentiated carcinoma cells (Immunostain, X 100).

Table 6. The relationship between PLC- γ 1 and p53

	PLC- γ 1	
	positive	negative
p53 positive	5	2
p53 negative	6	8

4. PLC- γ 1, p53
 PLC- γ 1 p53 가 5 ,
 PLC- γ 1 p53 가 2 ,
 PLC- γ 1 p53 가 6 ,
 PLC- γ 1 p53 가 8
 (Table 6).

IV.

1953 Hokin inosi-
 tol phospholipid가 ,7) 1975 Mitchell
 (15) Ca++ IP3
 .17-20) Phosphatidyl
 inositol Ca++ IP3 Protein
 kinase C DAG
 Phospholipase C가
 ,
 가

.1213) PLC 가 γ 1 (Table 2),
 PLC- γ 1 EGF PDGF 가 (Table 2).
 , I 60%, II 50%, III
 .2730) , , 33% 가 PLC- γ 1
 (Table 3).
 가 가 PLC- γ 1 가
 .1720) PLC- γ 1 tyrosine kinase p53 53kDa DNA
 src family noncatalytic domain SV40 transforming oncogene
 PLC SH2, SH3가 PLC- γ 1 T
 PLC- γ 1 .13) p53 17
 src family .2) p53
 .13) 가 p53
 PLC- γ 1
 PLC- γ 1
 .6) p53 ,
 PLC- γ 1 EGF, PDGF ,
 in vivo in vitro .45) p53
 tyrosine kinase tyro- 33% (Table 4),
 sine PLC SH domain 가 P53
 가 PLC- γ 1 (Table 5), p53
 .1013) PLC- γ 1 (microinjection) 가 가 가
 NIH 3T3 DNA p53 PLC- γ 1
 PLC- γ 1 ras DNA .14) 가 , PLC- γ 1 p53
 PLC- γ 1가
 . NGF 가 EGF, PDGF
 (intracellu-
 lar signaling cascade)

V.

.12) PLC- γ 1 52%, p53 33%
 . PLC- γ 1 p53
 가 .14)

.2730) .31-32)
 21 11 (52%) PLC-

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