Fig. 1

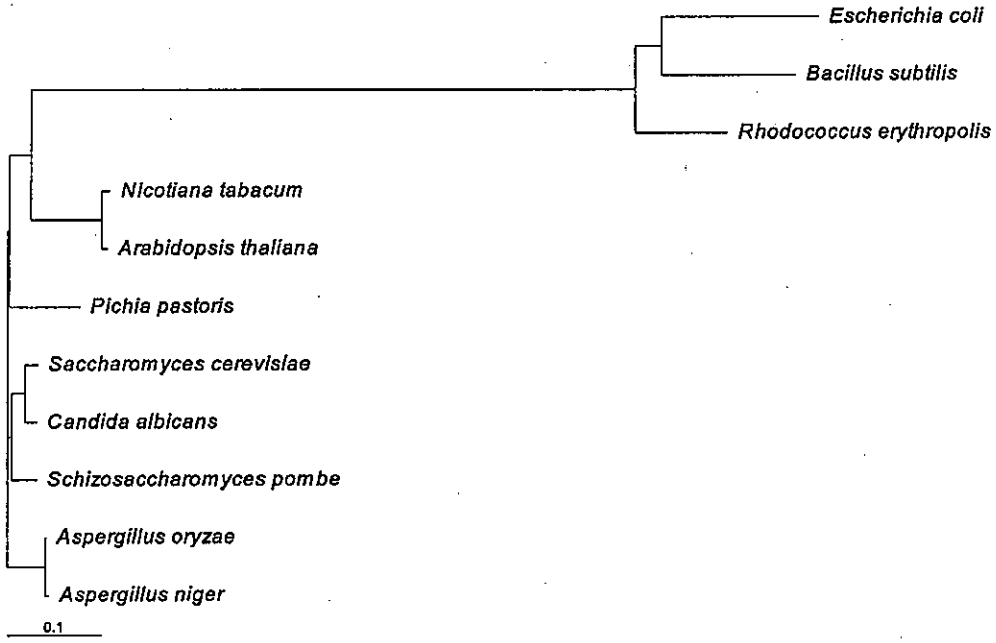

Escherichia coli
Bacillus subtilis
Rhodococcus erythropolis
Nicotiana tabacum
Arabidopsis thaliana
Pichia pastoris
Saccharomyces cerevisiae
Candida albicans
Schizosaccharomyces pombe
Aspergillus oryzae
Aspergillus niger
0.1

Fig. 2

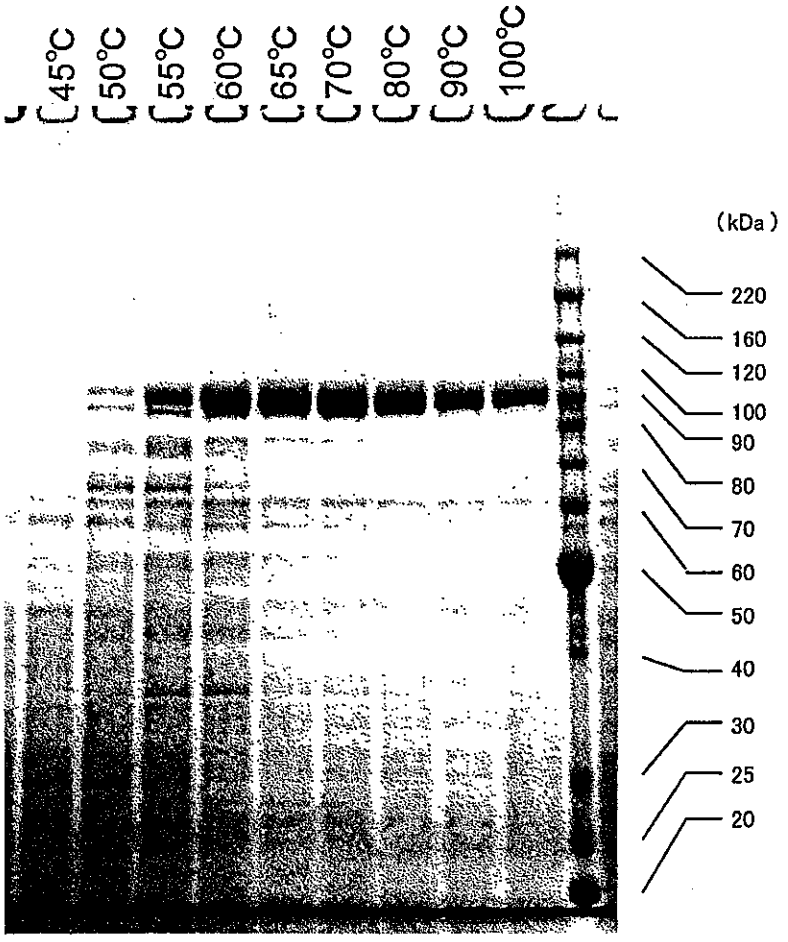

45°C
50°C
55°C
60°C
65°C
70°C
80°C
90°C
100°C
(kDa)
220
160
120
100
90
80
70
60
50
40
30
25
20

Fig. 3

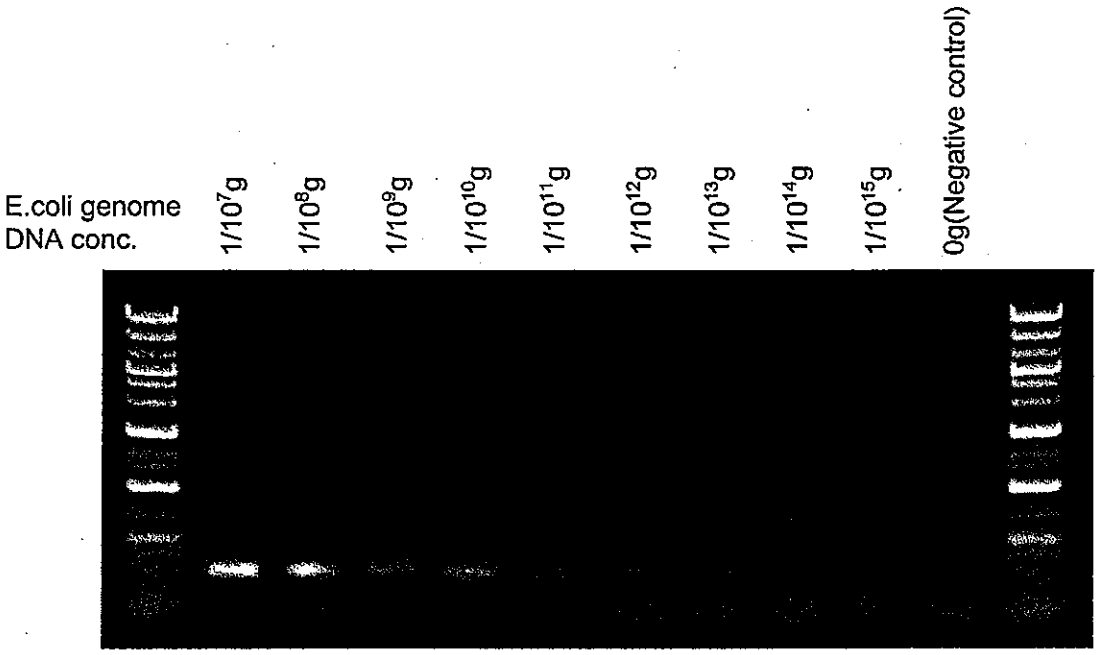
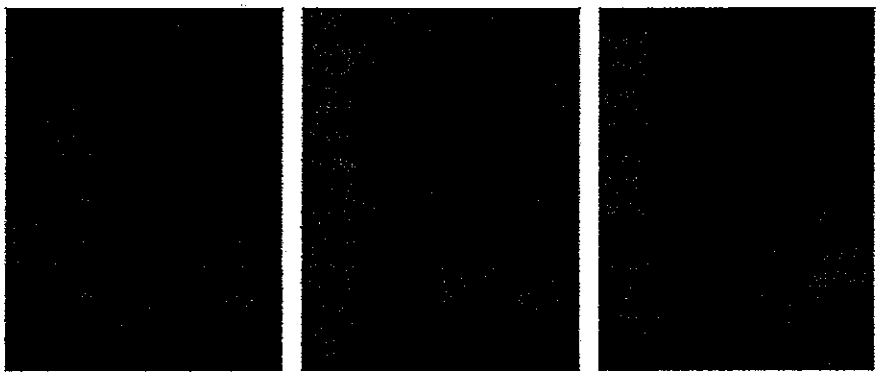

E.coli genome DNA conc.
1/10^7g
1/10^8g
1/10^9g
1/10^10g
1/10^11g
1/10^12g
1/10^13g
1/10^14g
1/10^15g
0g(Negative control)

Fig. 4

Host	n.d.			n.d.			S.Cerevisiae		
DNA Polymerase	TaKaRa TaKaRa Taq			ABI AmpliTaq Gold LD			Taq DNA Polymerase		
E.Coli DNA	-	-	O	-	-	O	-	-	O
PCR cycle	40	60	30	40	60	30	40	60	30
Lane	1	2	3	4	5	6	7	8	9



Host	n.d.			n.d.			S.Cerevisiae		
DNA Polymerase	TaKaRa TaKaRa Taq			ABI AmpliTaq Gold LD			Taq DNA Polymerase		
E.Coli DNA	-	-	O	-	-	O	-	-	O
PCR cycle	40	60	30	40	60	30	40	60	30
Lane	10	11	12	13	14	15	16	17	18

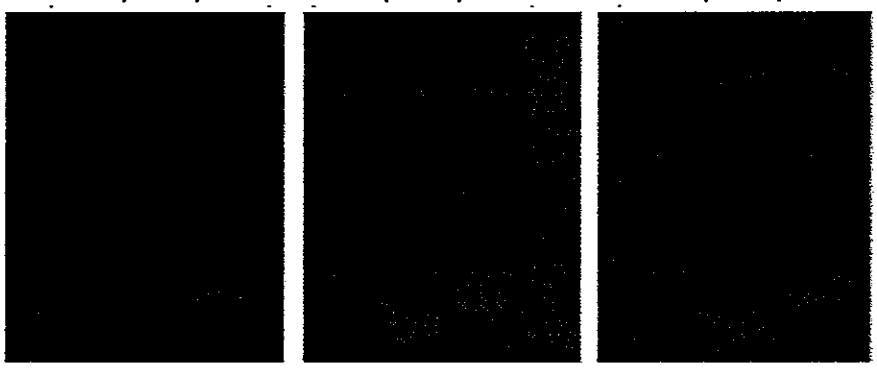
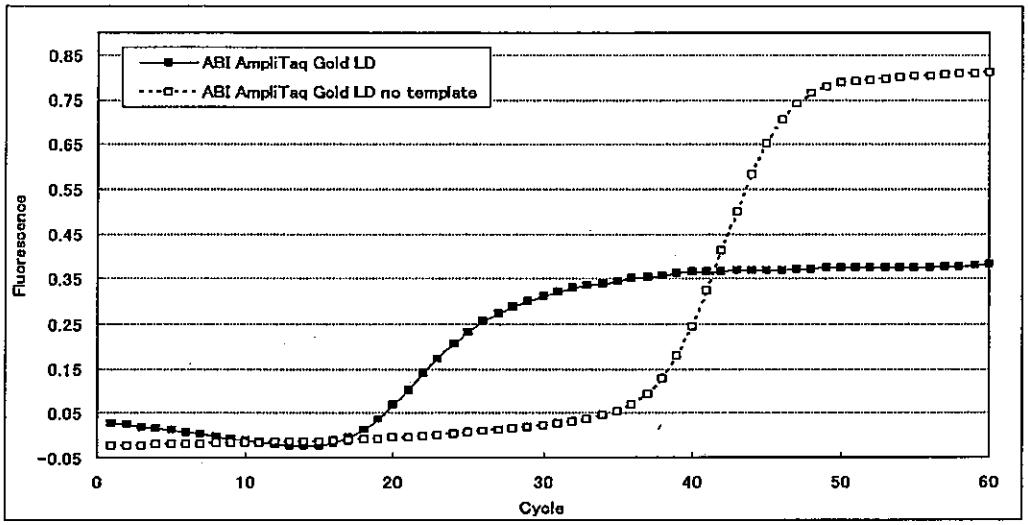


Fig. 5

(A)


ABI AmpliTaq Gold LD
ABI AmpliTaq Gold LD no template
Fluorescence
Cycle
0.85
0.75
0.65
0.55
0.45
0.35
0.25
0.15
0.05
-0.05
0
10
20
30
40
50
60

(B)

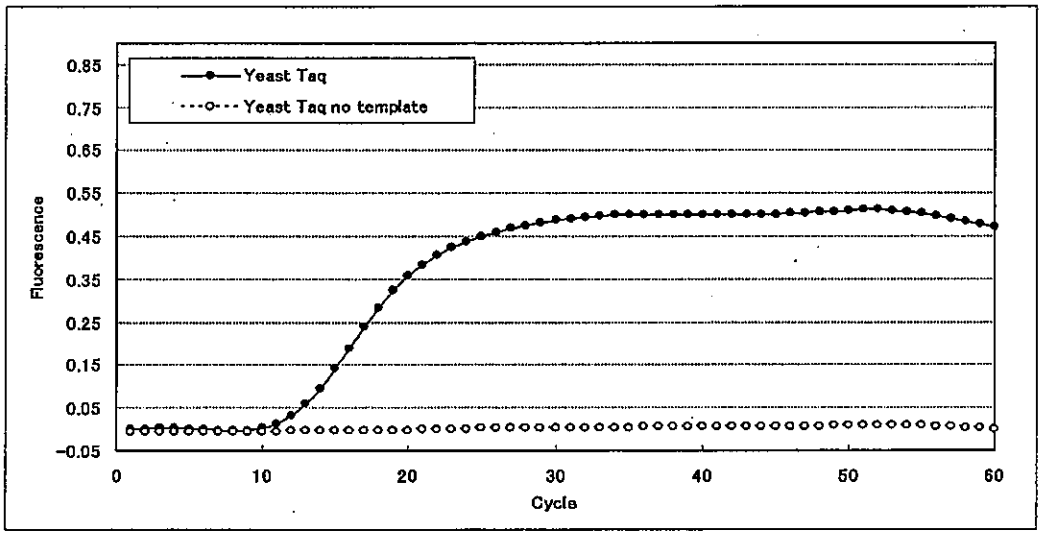
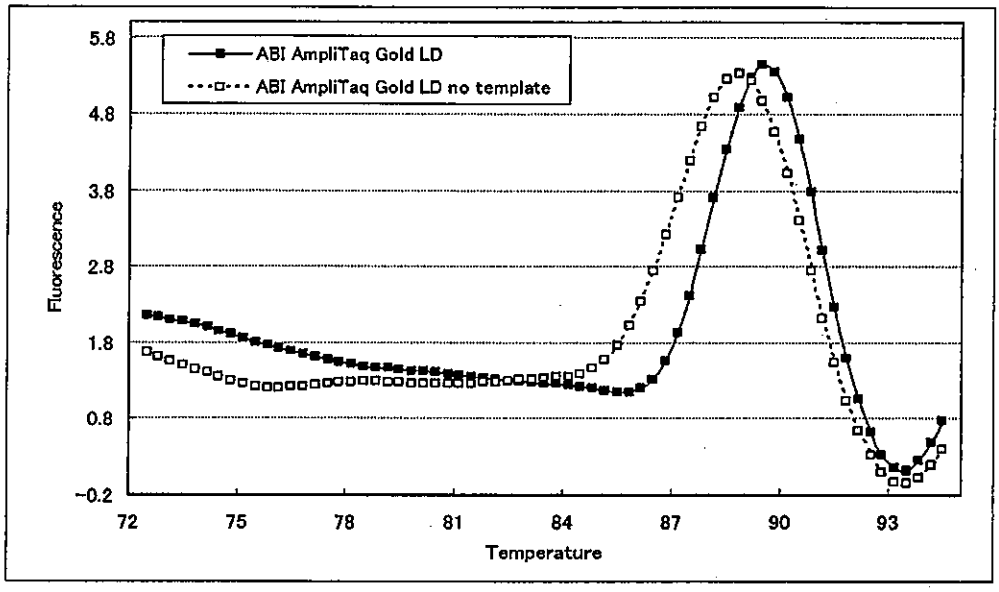

Yeast Taq
Yeast Taq no template
Fluorescence
Cycle
0.85
0.75
0.65
0.55
0.45
0.35
0.25
0.15
0.05
-0.05
0
10
20
30
40
50
60

Fig. 6

(A)


ABI AmpliTaq Gold LD
ABI AmpliTaq Gold LD no template
Fluorescence
Temperature
5.8
4.8
3.8
2.8
1.8
0.8
-0.2
72
75
78
81
84
87
90
93

(B)

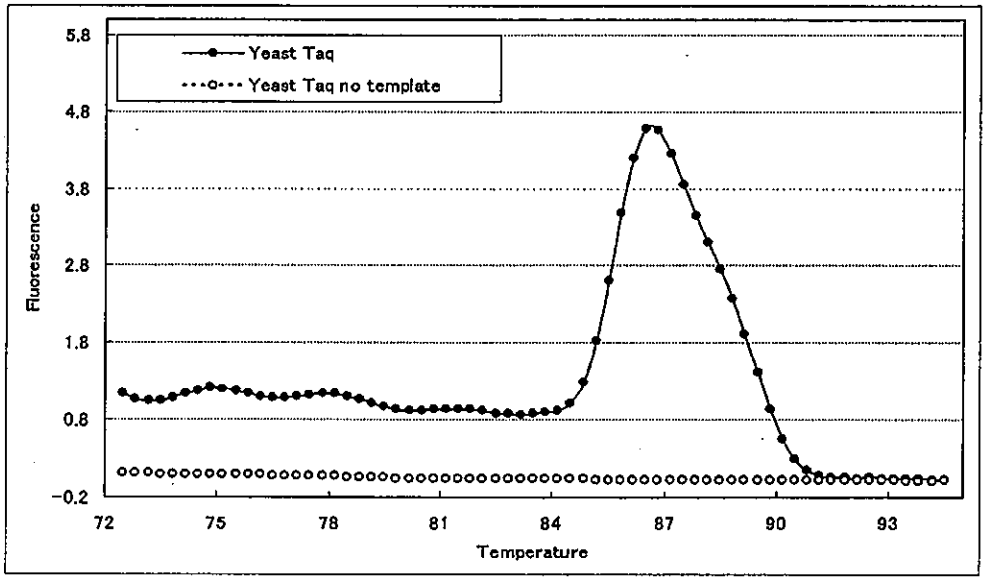

Yeast Taq
Yeast Taq no template
Fluorescence
Temperature
5.8
4.8
3.8
2.8
1.8
0.8
-0.2
72
75
78
81
84
87
90
93

Fig. 7

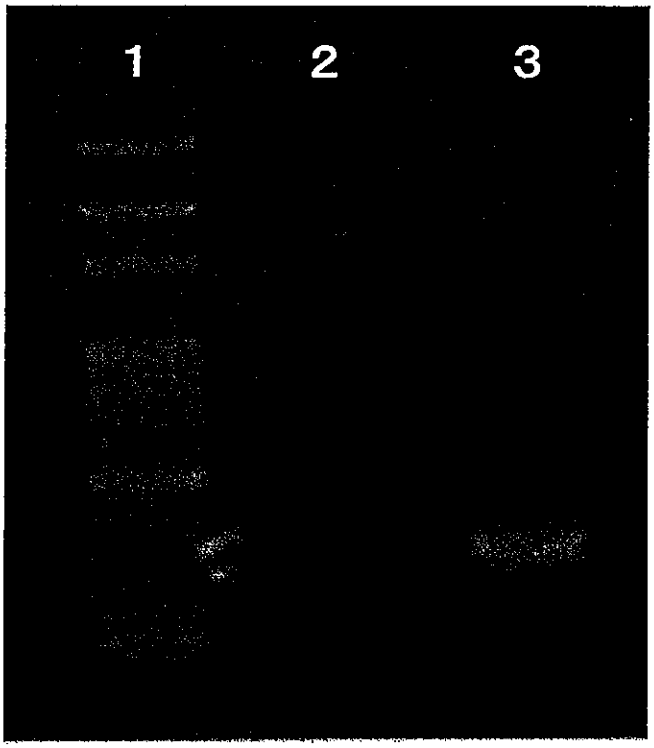


Fig. 8

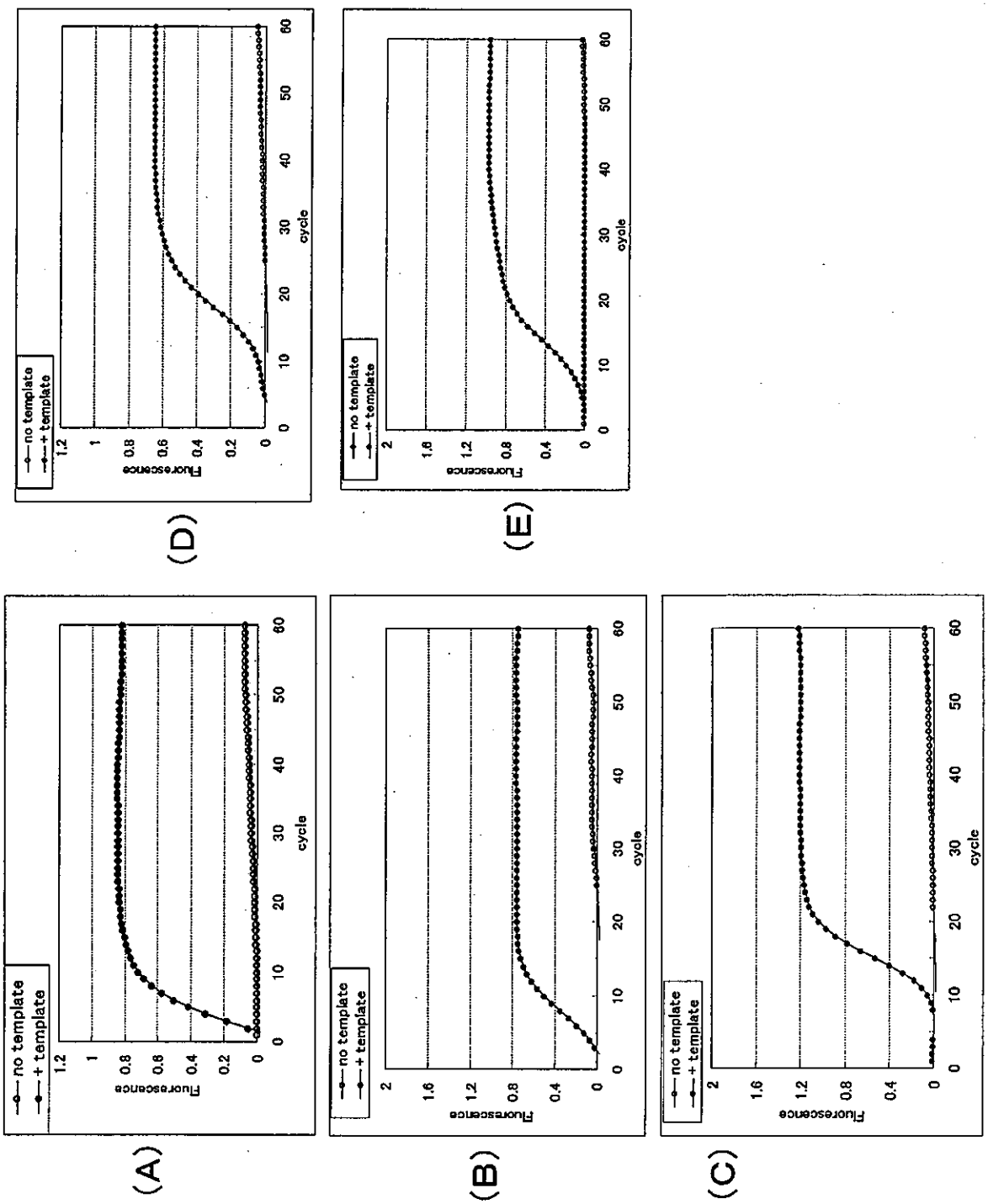


Fig. 9

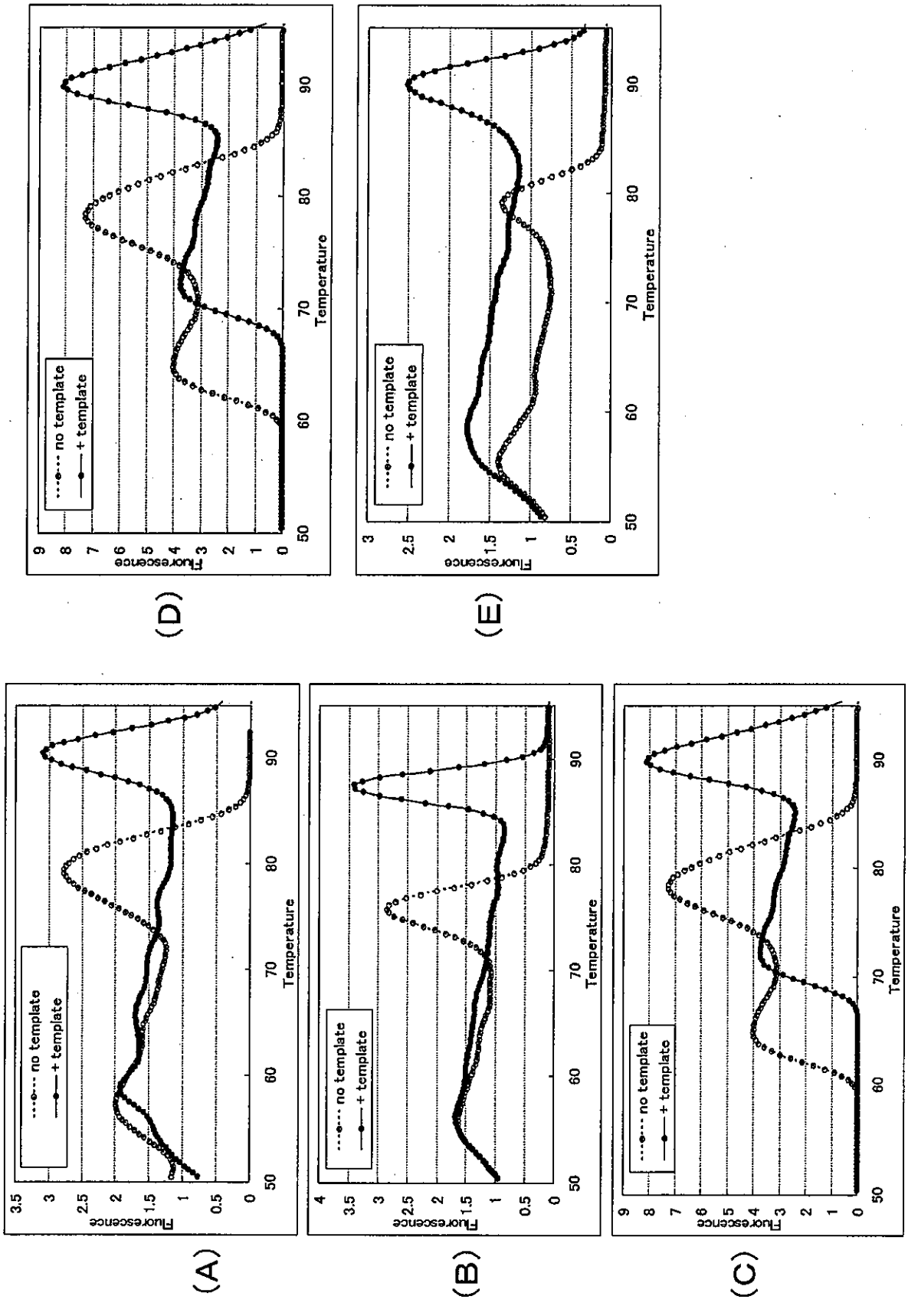


Fig. 10

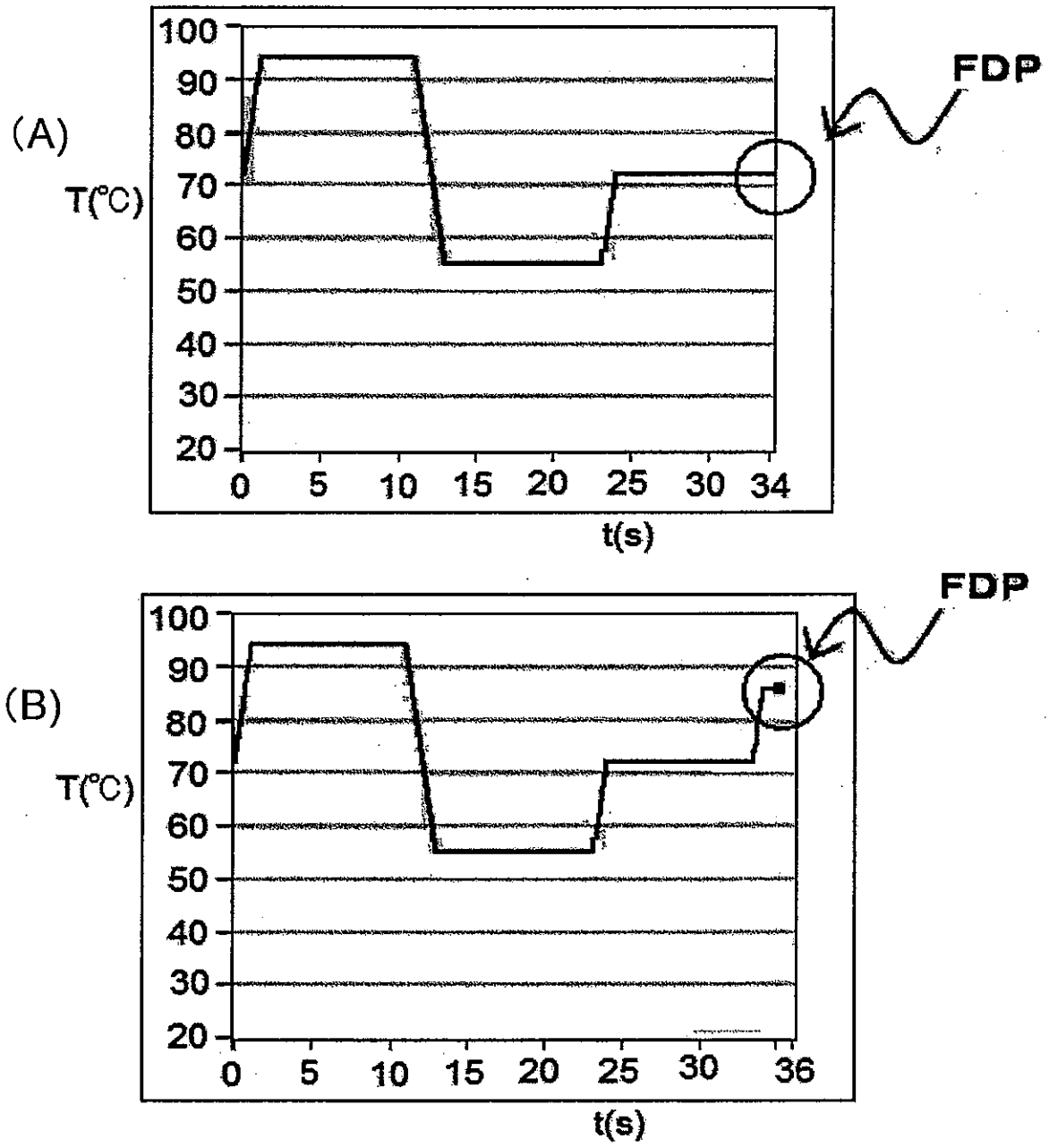
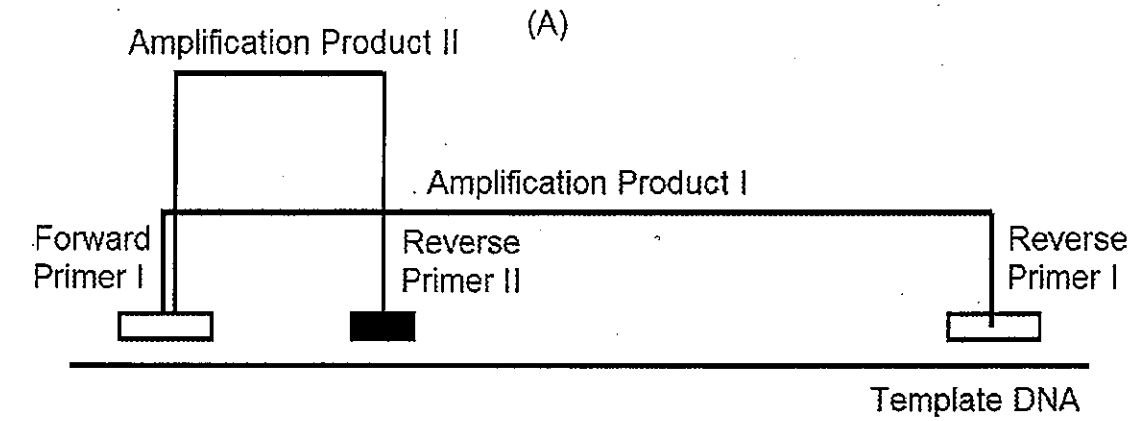
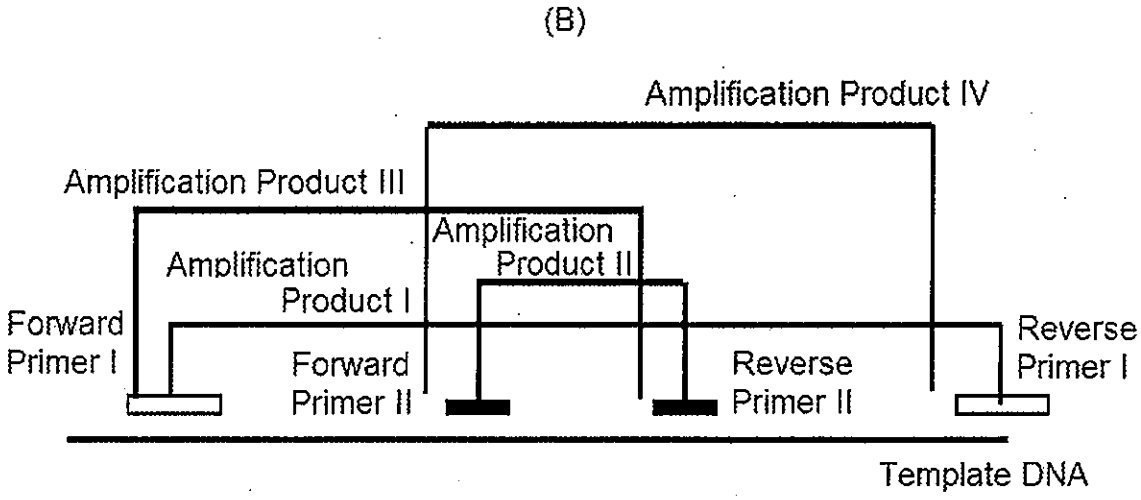

(A)
T(℃)
100
90
80
70
60
50
40
30
20
0
5
10
15
20
25
30
34
t(s)
FDP
(B)
T(℃)
100
90
80
70
60
50
40
30
20
0
5
10
15
20
25
30
36
t(s)
FDP

Fig. 11


(A)
Amplification Product II
Amplification Product I
Forward Primer I
Reverse Primer II
Reverse Primer I
Template DNA


(B)
Amplification Product IV
Amplification Product III
Amplification Product II
Amplification Product I
Forward Primer I
Forward Primer II
Reverse Primer II
Reverse Primer I
Template DNA

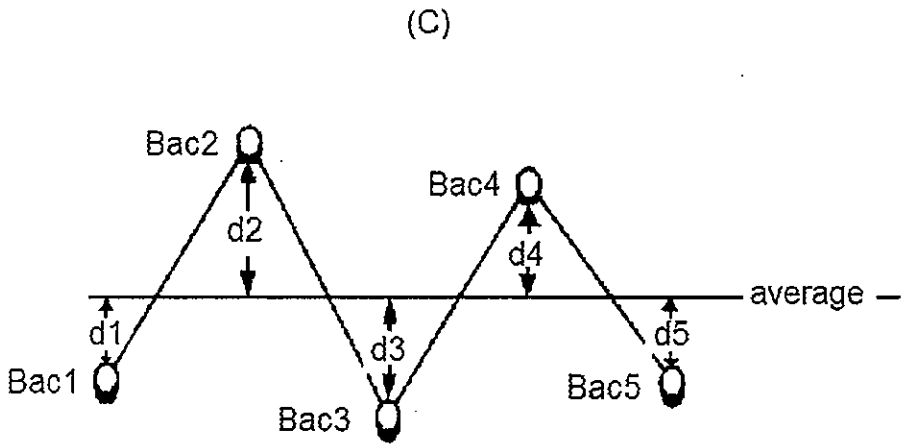

(C)
Bac2
Bac4
d2
d4
average
d1
d3
d5
Bac1
Bac3
Bac5

Fig. 12

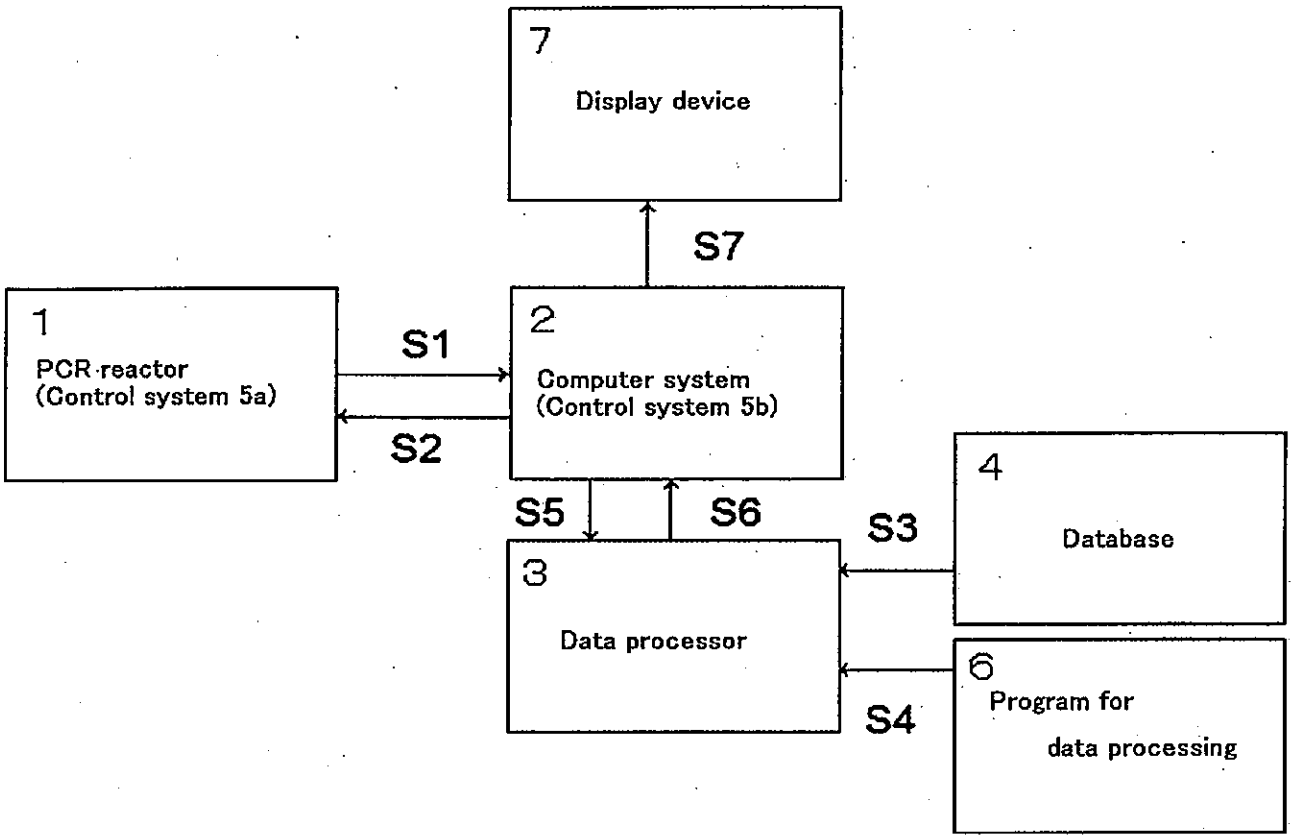

7
Display device
S7
1
PCR reactor
(Control system 5a)
S1
S2
2
Computer system
(Control system 5b)
S5
S6
S3
4
Database
3
Data processor
6
Program for
data processing
S4

Fig. 13

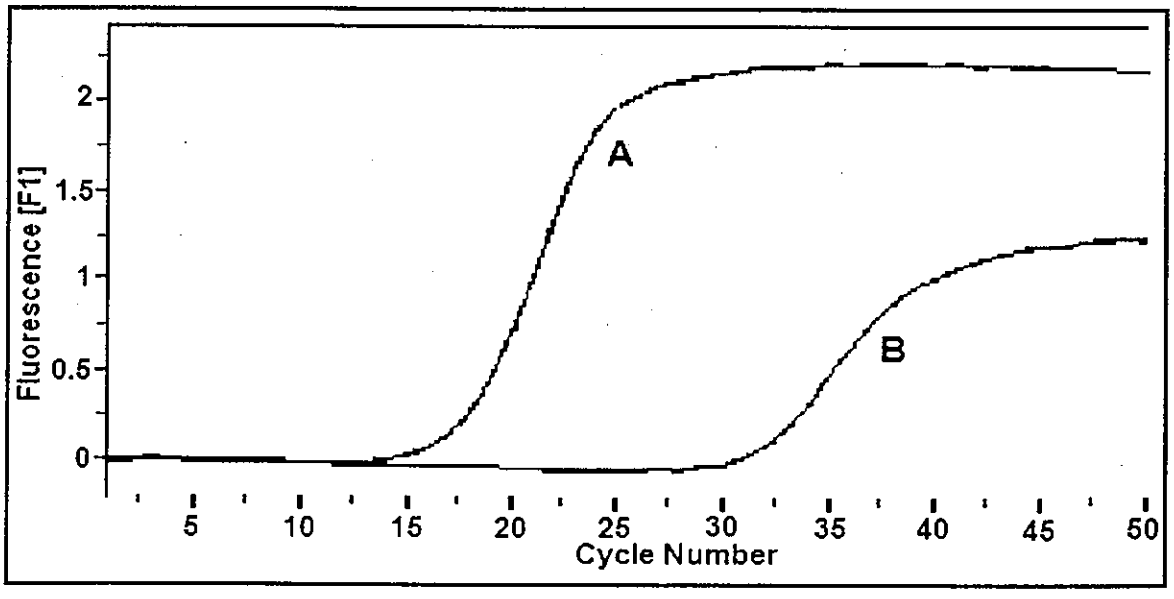

Fluorescence [F1]
2
1.5
1
0.5
0
A
B
5
10
15
20
25
30
35
40
45
50
Cycle Number

Fig. 14

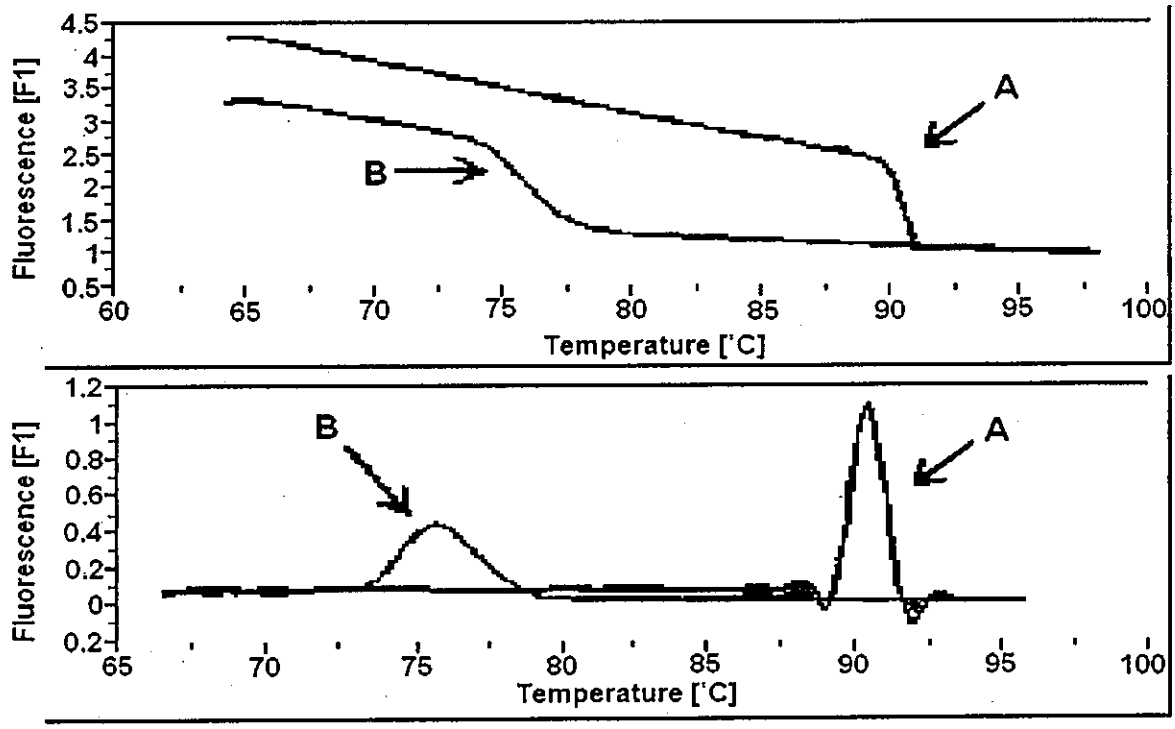
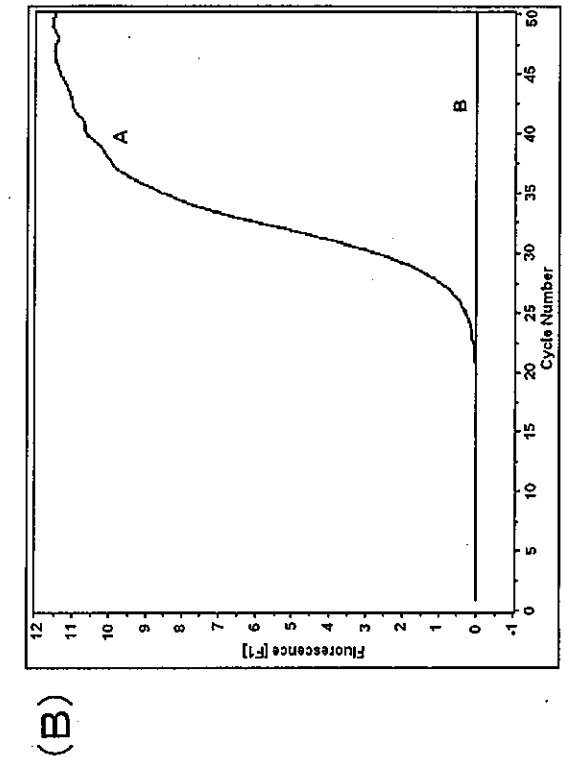
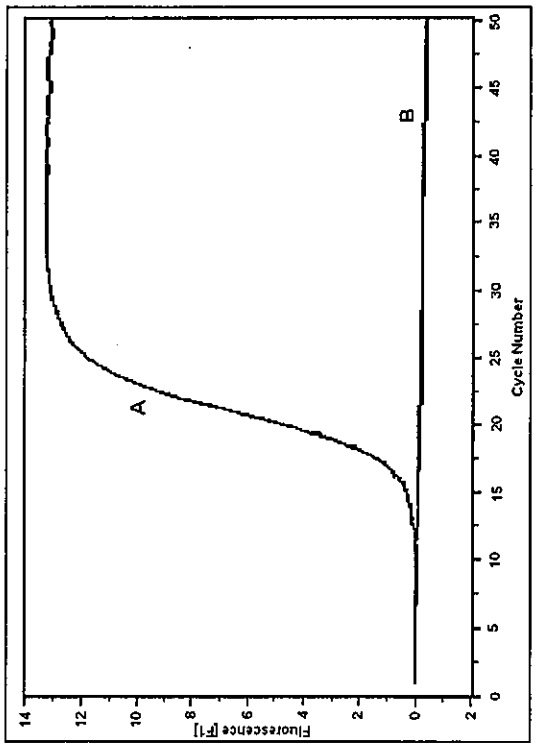

Fluorescence [F1]
4.5
4
3.5
3
2.5
2
1.5
1
0.5
60
65
70
75
80
85
90
95
100
Temperature [°C]
A
B
Fluorescence [F1]
1.2
1
0.8
0.6
0.4
0.2
0
0.2
65
70
75
80
85
90
95
100
Temperature [°C]
B
A

Fig. 15


(B)
Fluorescence [F1]
Cycle Number
A
B


(A)
Fluorescence [F1]
Cycle Number
A
B

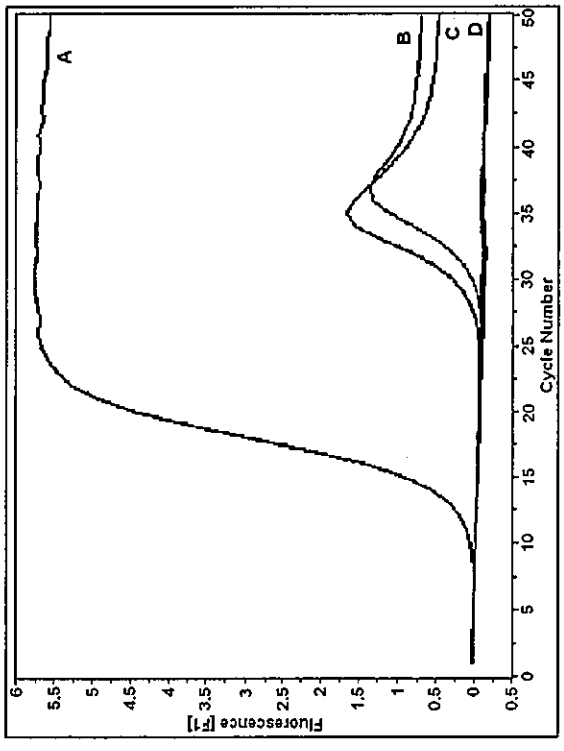
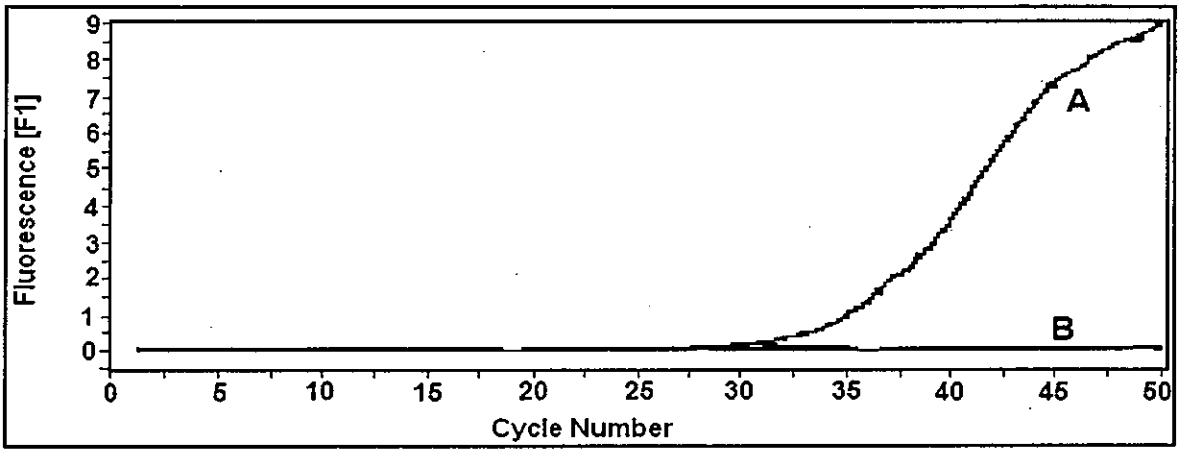
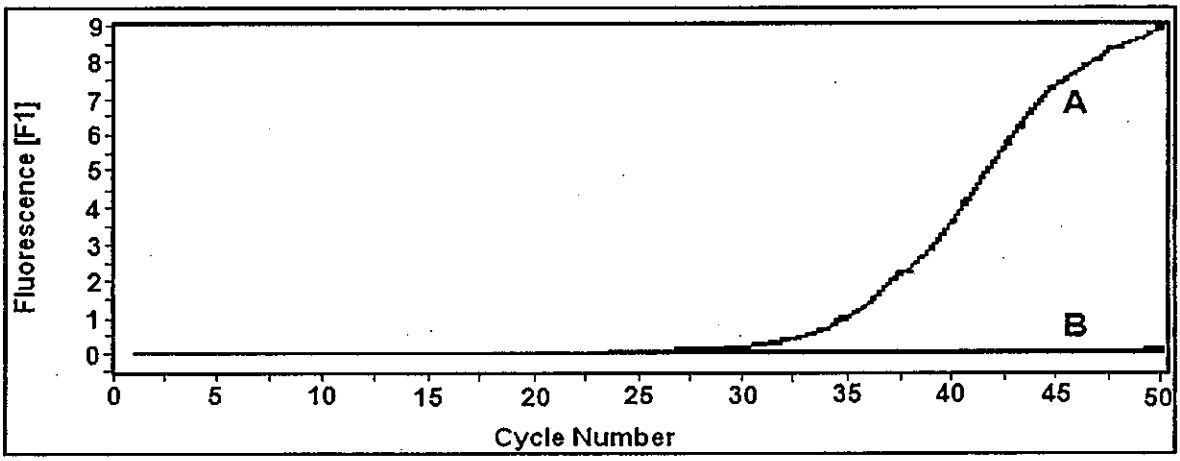

(C)
Fluorescence [F1]
Cycle Number
A
B
C
D

Fig. 16

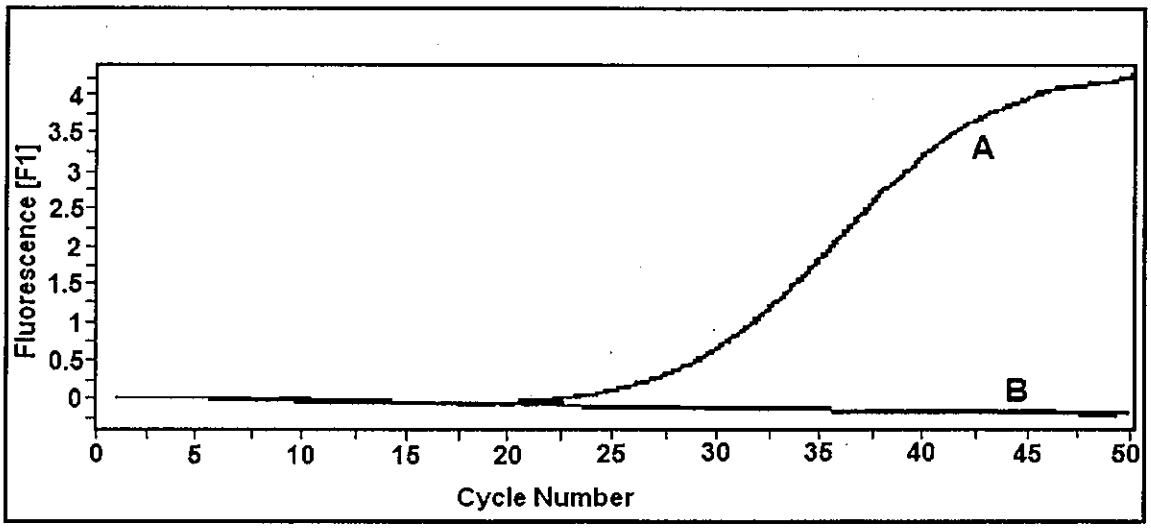

Fluorescence [F1]
0
1
2
3
4
5
6
7
8
9
0
5
10
15
20
25
30
35
40
45
50
Cycle Number
A
B

(A)

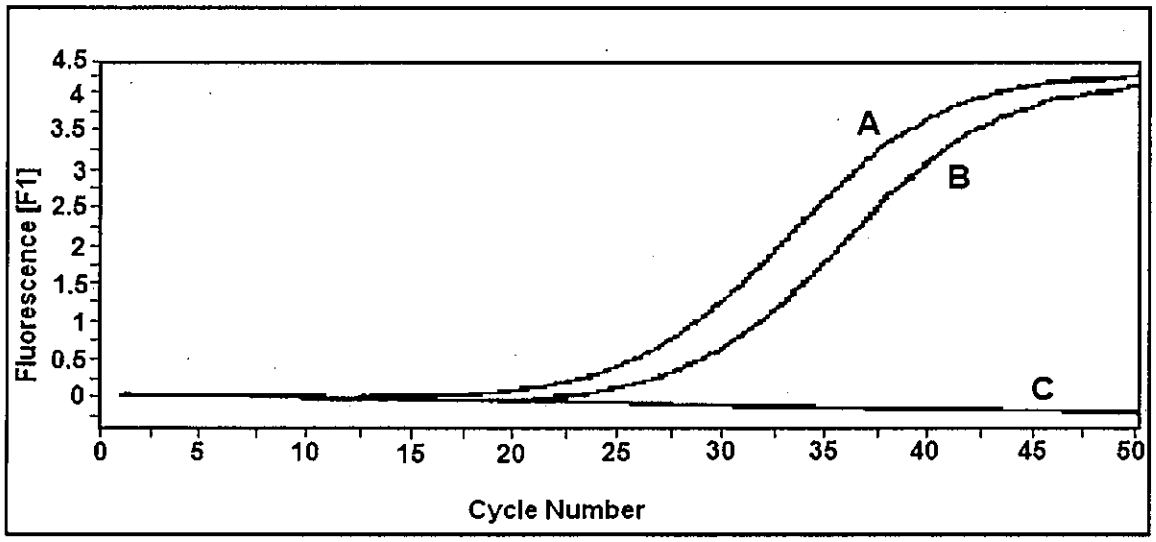

Fluorescence [F1]
0
1
2
3
4
5
6
7
8
9
0
5
10
15
20
25
30
35
40
45
50
Cycle Number
A
B

(B)

Fig. 17

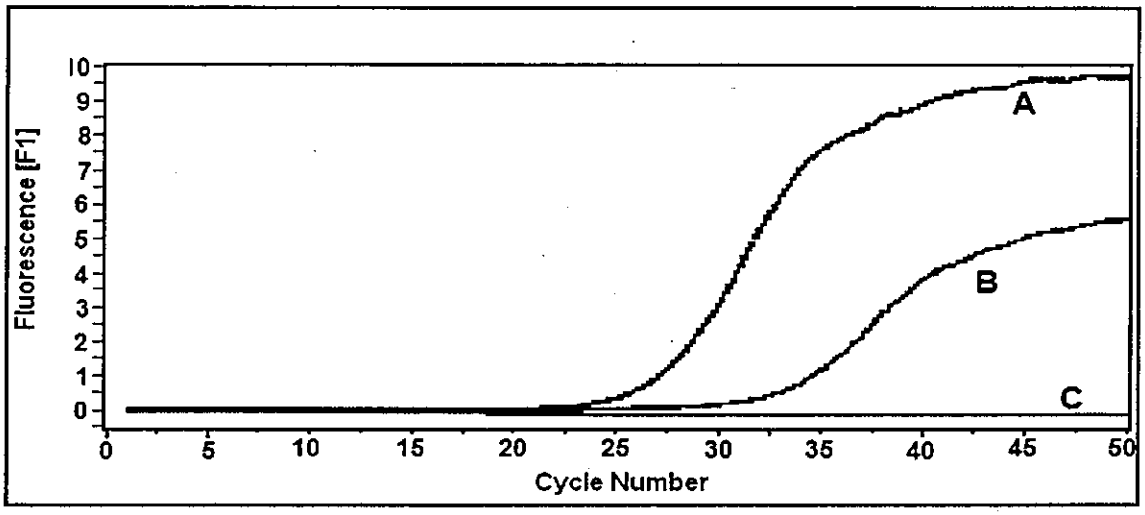

Fluorescence [F1]
Cycle Number
A
B
0
0.5
1
1.5
2
2.5
3
3.5
4
0
5
10
15
20
25
30
35
40
45
50

(A)

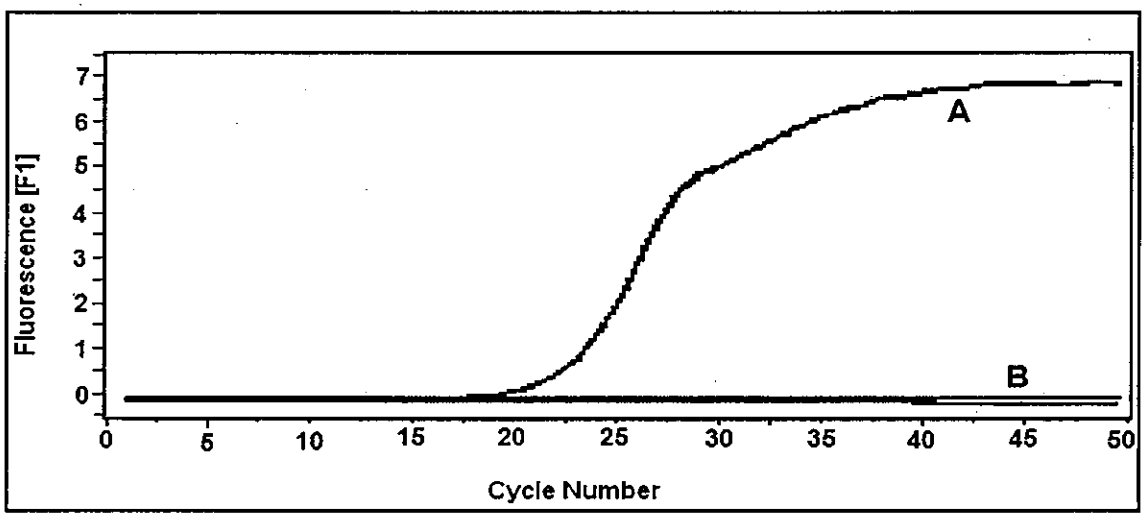

Fluorescence [F1]
Cycle Number
A
B
C
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
0
5
10
15
20
25
30
35
40
45
50

(B)

Fig. 18

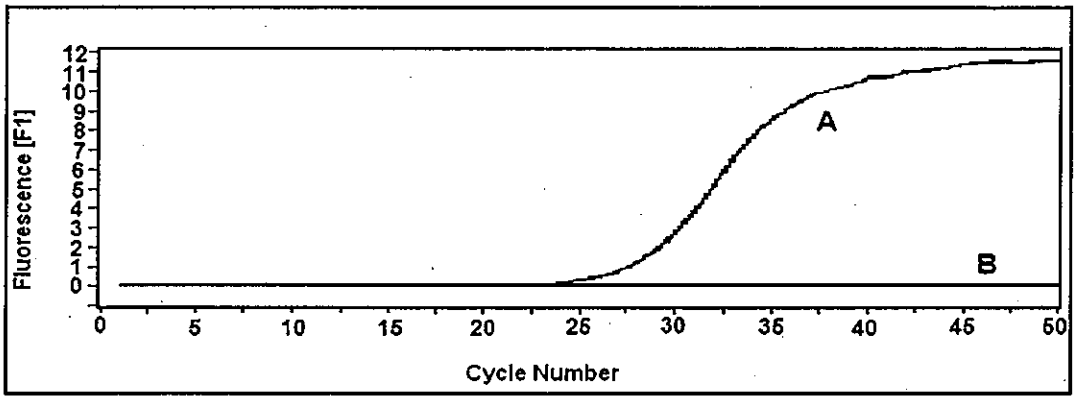

Fluorescence [F1]
Cycle Number
A
B
C

(A)

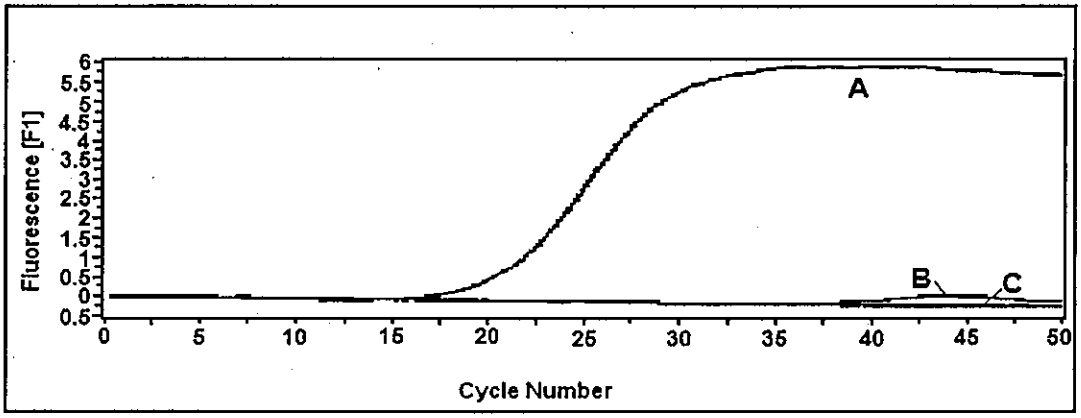

Fluorescence [F1]
Cycle Number
A
B

(B)

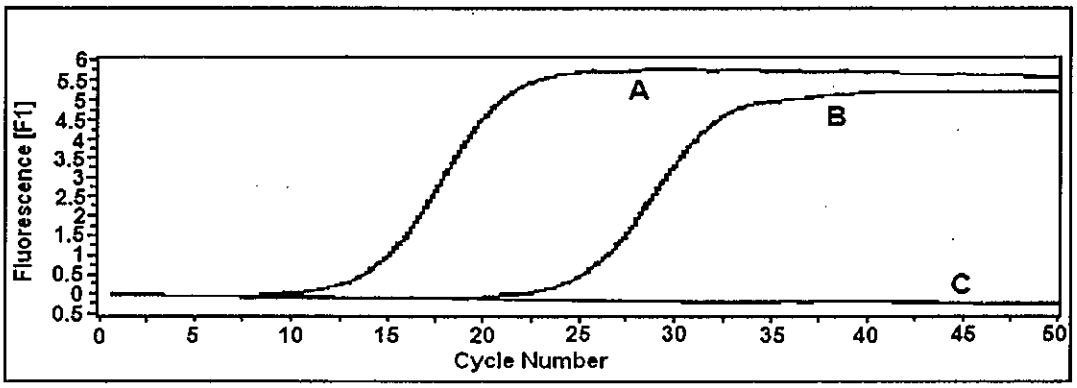
Fig. 19


Fluorescence [F1]
Cycle Number
A
B

(A)


Fluorescence [F1]
Cycle Number
A
B
C

(B)


Fluorescence [F1]
Cycle Number
A
B
C

(C)

Fig. 20

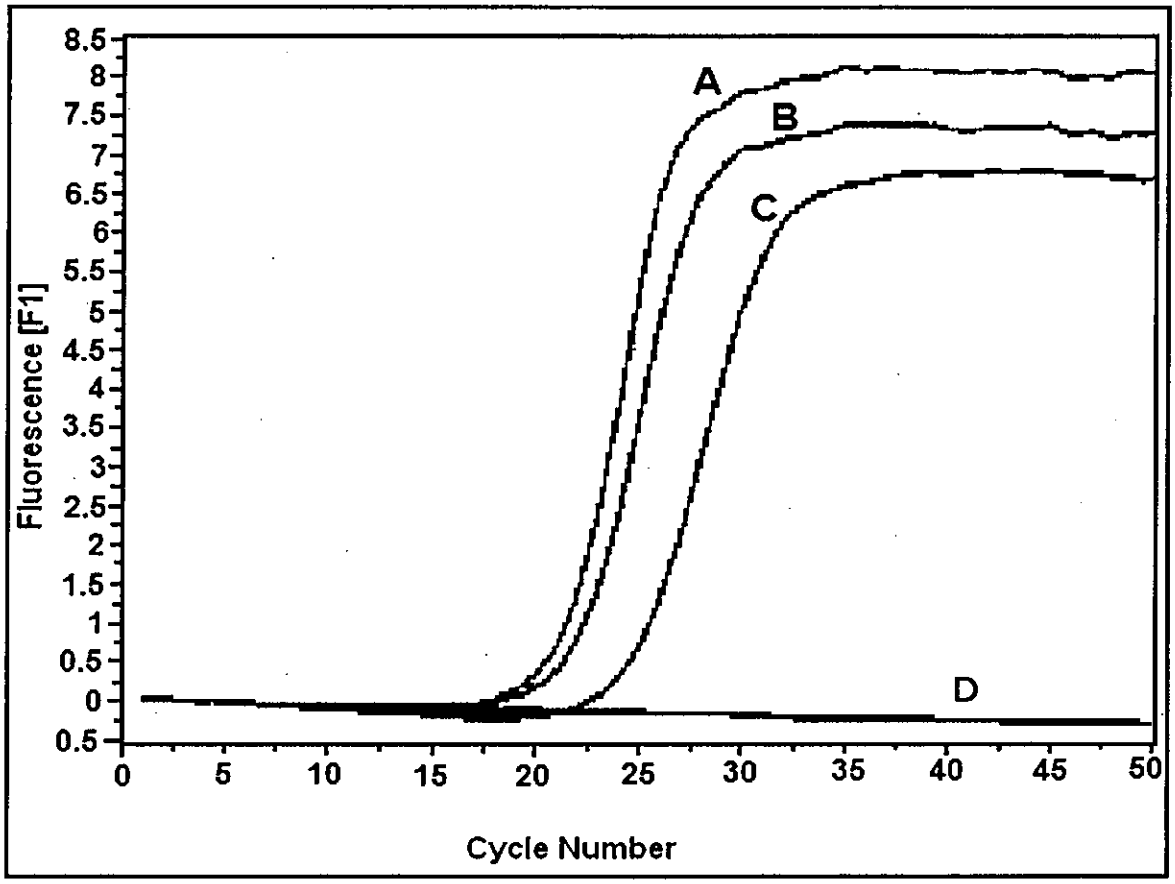

Fluorescence [F1]
Cycle Number
A
B
C
D
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.5
0
5
10
15
20
25
30
35
40
45
50

Fig. 21

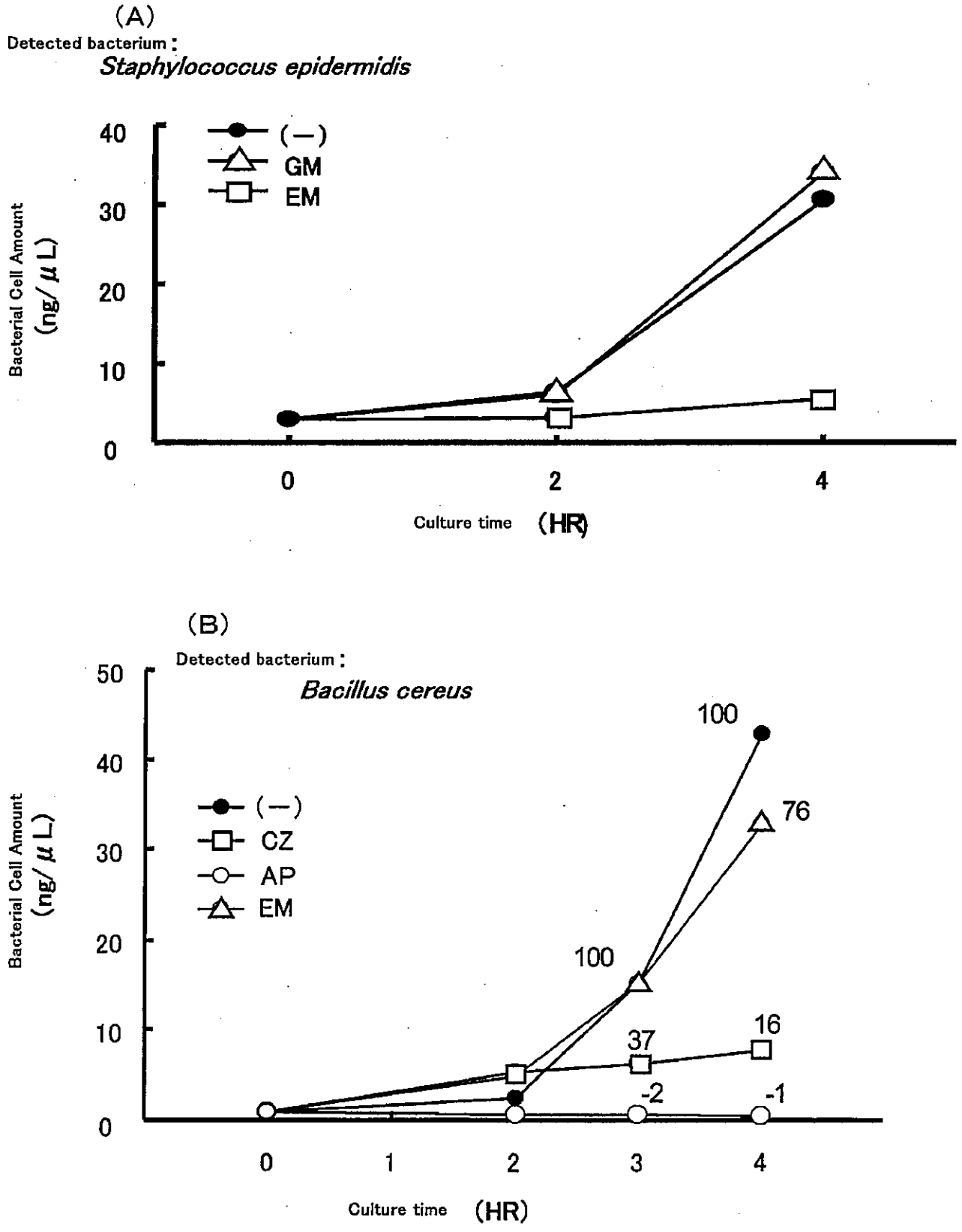

(A)
Detected bacterium :
Staphylococcus epidermidis
Bacterial Cell Amount (ng/μL)
40
30
20
10
0
(—)
GM
EM
0
2
4
Culture time (HR)
(B)
Detected bacterium :
Bacillus cereus
Bacterial Cell Amount (ng/μL)
50
40
30
20
10
0
(—)
CZ
AP
EM
100
76
100
37
16
-2
-1
0
1
2
3
4
Culture time (HR)

Fig. 22

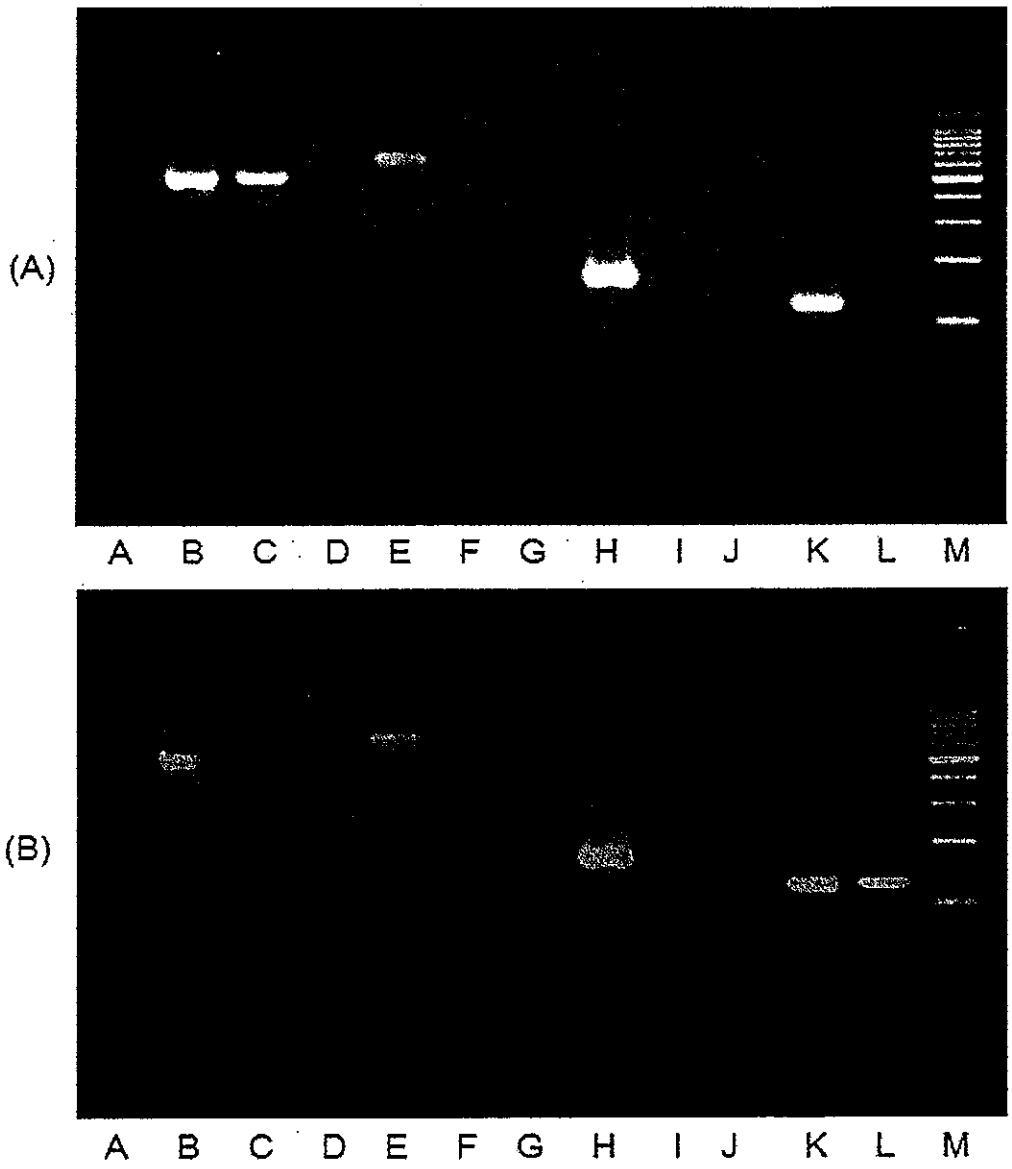
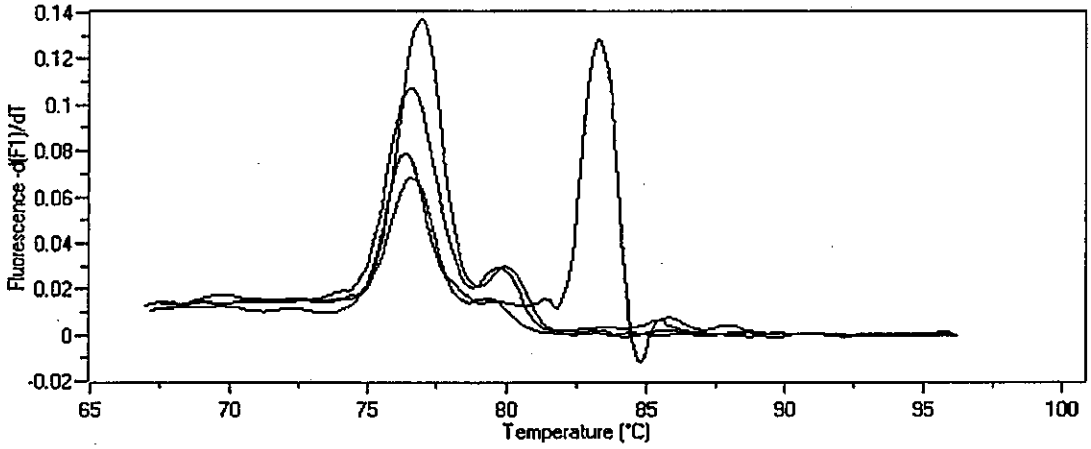
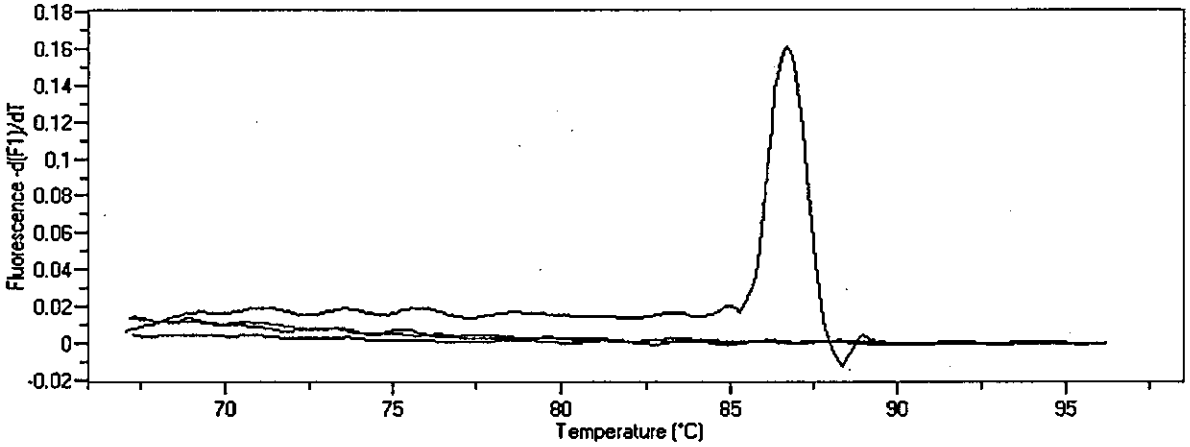


Fig. 23


Fluorescence -d(F1)/dT
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
65
70
75
80
85
90
95
100
Temperature (°C)

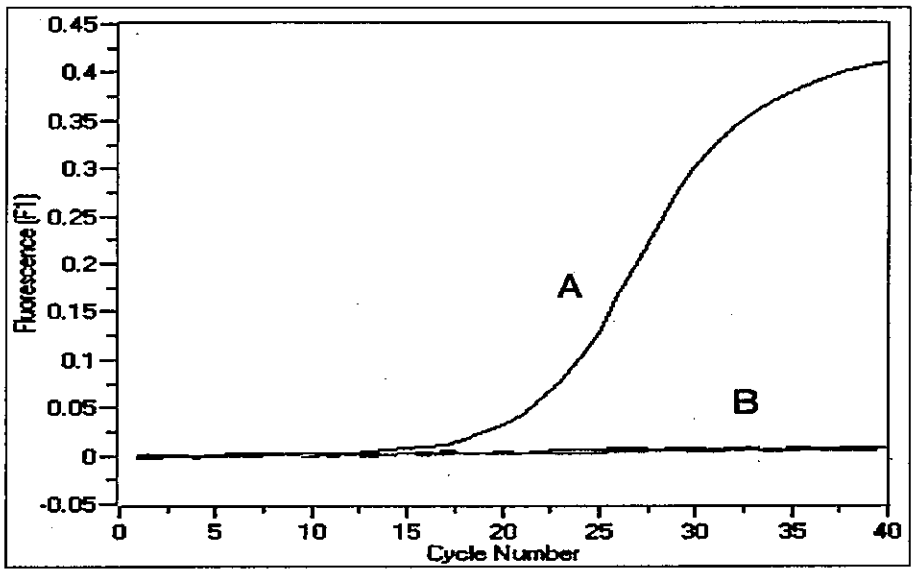
(A)


Fluorescence -d(F1)/dT
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
70
75
80
85
90
95
Temperature (°C)

(B)

Fig. 24

(A)


0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
Fluorescence (F1)
A
B
0
5
10
15
20
25
30
35
40
Cycle Number

(B)

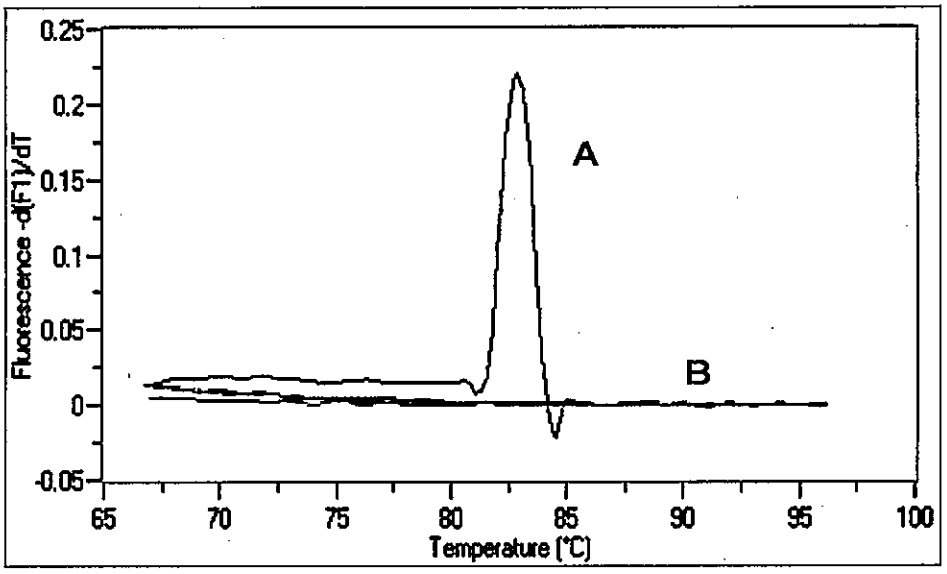

0.25
0.2
0.15
0.1
0.05
0
-0.05
Fluorescence -d(F1)/dT
A
B
65
70
75
80
85
90
95
100
Temperature (°C)

Fig. 25

Amplification 1		Amplification 2		Amplification 1 + 2	
D.W.	E. Coli	D.W.	E. Coli	D.W.	E. Coli



Amplification Product I

Amplification Product II