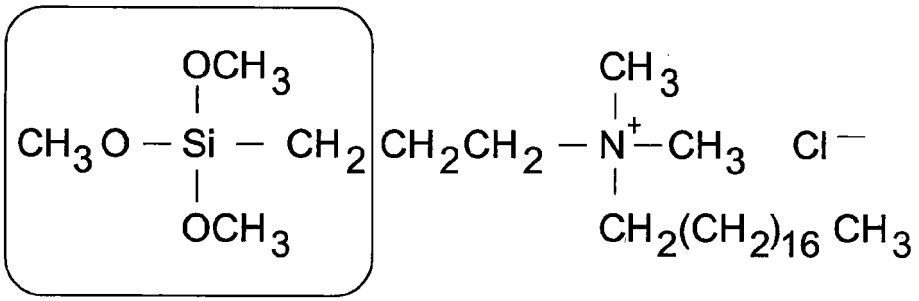

OCH3
CH3O – Si – CH2
OCH3
CH2CH2 – N+ – CH3
CH2(CH2)16 CH3
CH3
Cl –

Fig.1

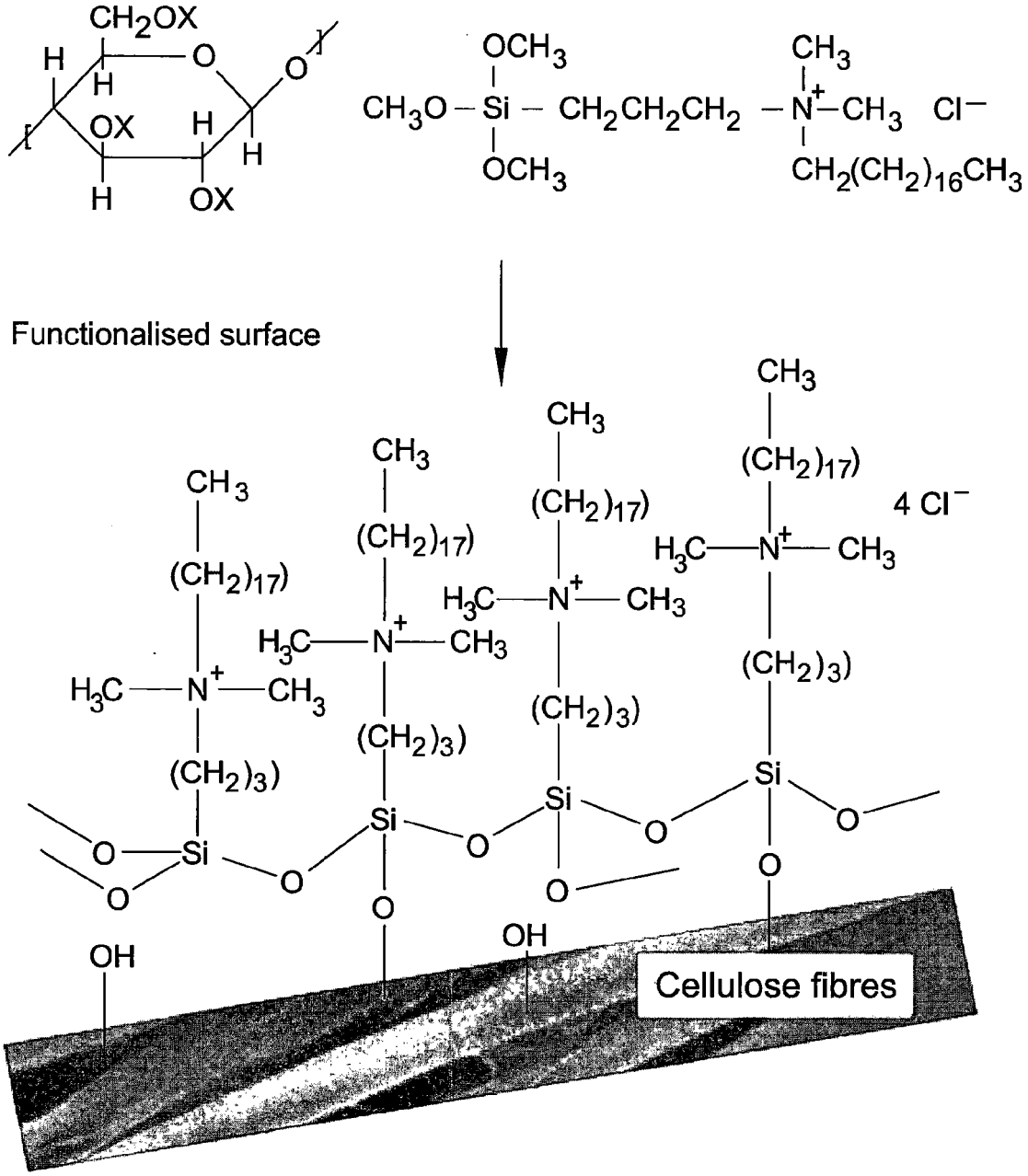

CH2OX
H
O
OX
H
H
H
OX
OCH3
CH3O – Si – CH2CH2CH2 – N+ – CH3
OCH3
CH3
Cl –
CH2(CH2)16CH3
Functionalised surface
CH3
(CH2)17
H3C – N+ – CH3
(CH2)3
Si
O
OH
4 Cl –
Cellulose fibres

Fig.2

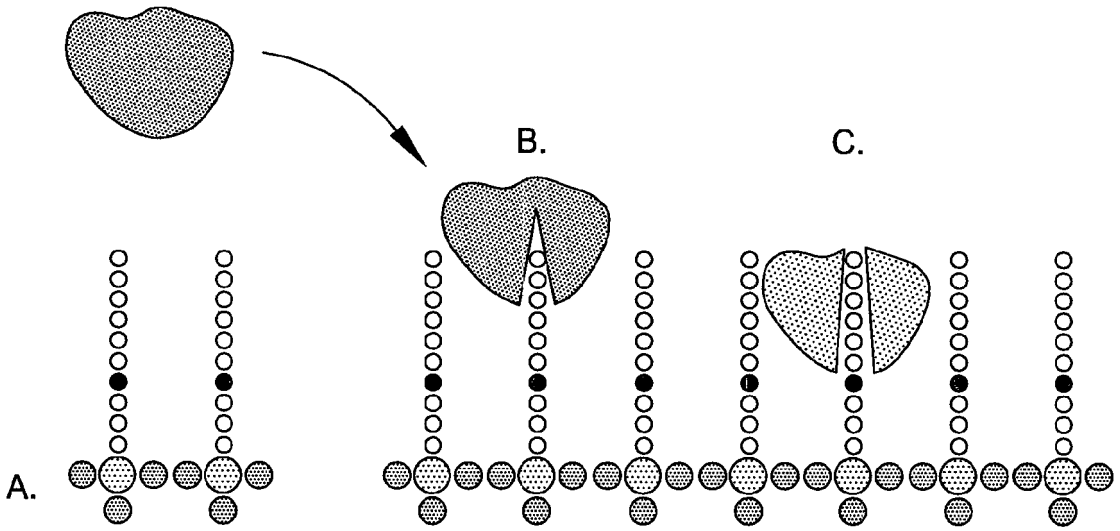
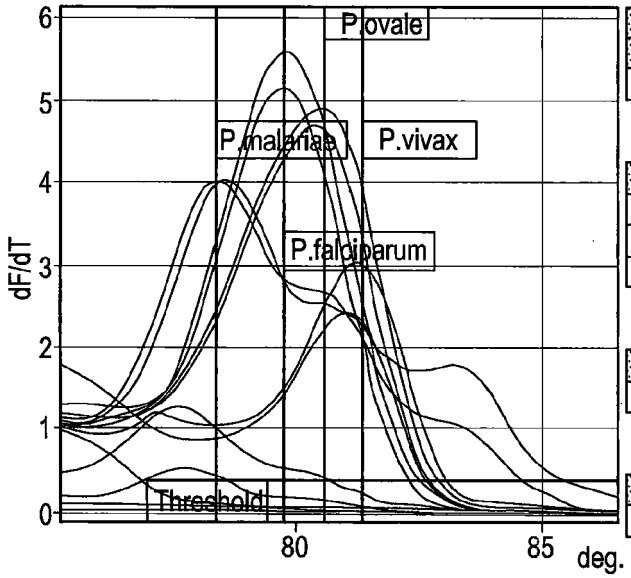


Fig.3



Bin Name	Temperature	Sample No.	Sample Name	Peak
P.falciparum	79,76	6	F	79,9
		24	F	79,8
			Mean	79,80
			Std. Dev.	0,05
P.malariae	78,40	8	M	78,6
		19	1+M	77.7
		21	3+M	77.8
		26	M	78.5
			Mean	78.13
			Std. Dev.	0,43
P.ovale	80,68	7	O	80,5
		25	O	80,4
			Mean	80,45
			Std. Dev.	0,05
P.vivax	81,33	5	v	81,0
		23	v	81,3
			Mean	81,13
			Std. Dev.	0,13

Fig.4

Sample	GeneXpert	Genedrive						
		Process A		Process B		Process C		
		I	II	I	II	I	II	III
1	MTB RIFs	MTB	MTB RIFs	MTB	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs
2	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs
3	FAILED	FAILED	FAILED	FAILED	FAILED	FAILED	MTB	MTB
4	MTB RIFs	FAILED	MTB RIFs	FAILED	MTB RIFs	MTB RIFs	MTB RIFs	MTB RIFs
5	MTB RIFr	MTB RIFr	MTB RIFr	MTB RIFr	MTB RIFr	MTB RIFr	MTB RIFr	MTB RIFr

Fig.5

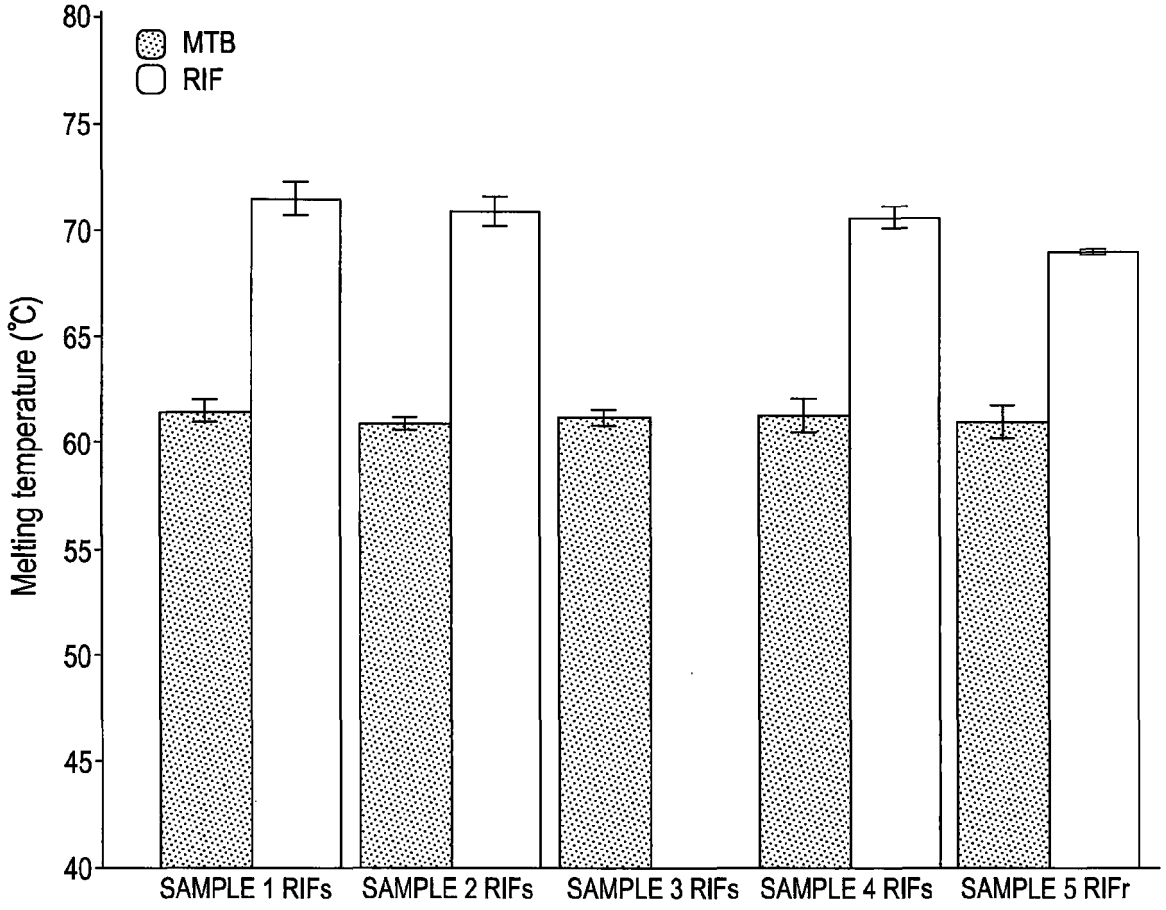


Fig.6

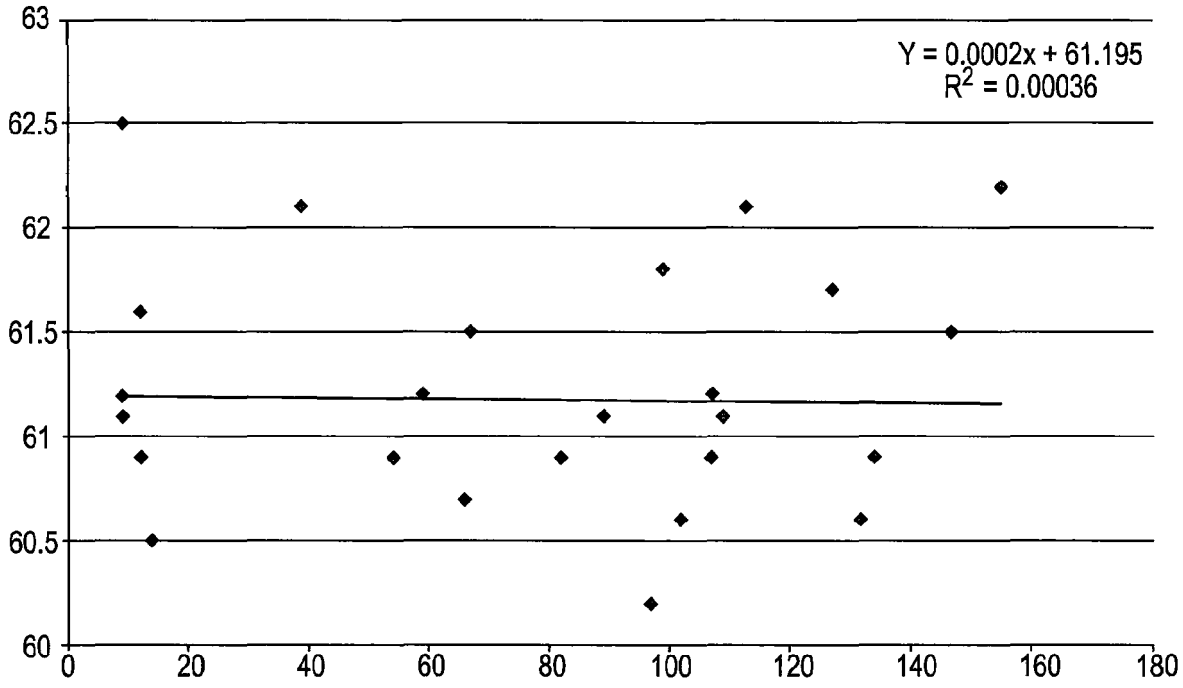

Y = 0.0002x + 61.195
R2 = 0.00036
63
62.5
62
61.5
61
60.5
60
0
20
40
60
80
100
120
140
160
180

Fig.7

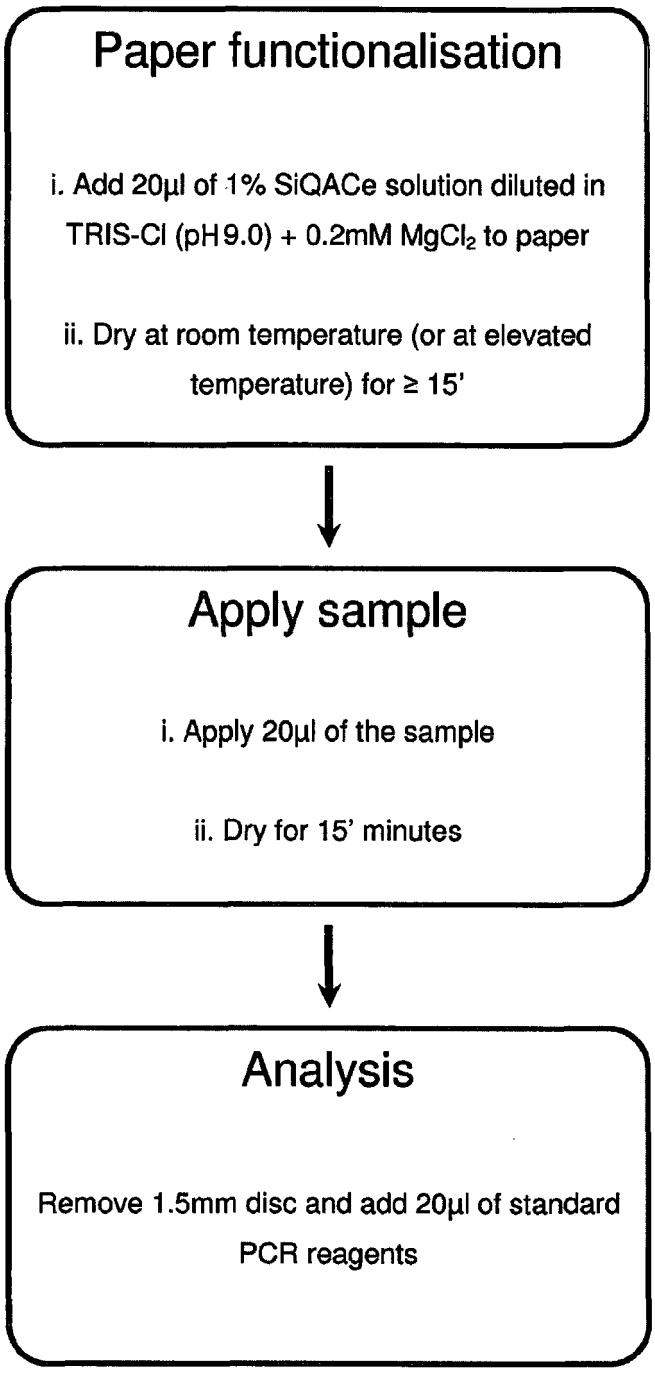

Paper functionalisation
i. Add 20µl of 1% SiQACe solution diluted in TRIS-Cl (pH 9.0) + 0.2mM $MgCl_2$ to paper
ii. Dry at room temperature (or at elevated temperature) for ≥ 15'
Apply sample
i. Apply 20µl of the sample
ii. Dry for 15' minutes
Analysis
Remove 1.5mm disc and add 20µl of standard PCR reagents

Fig.8

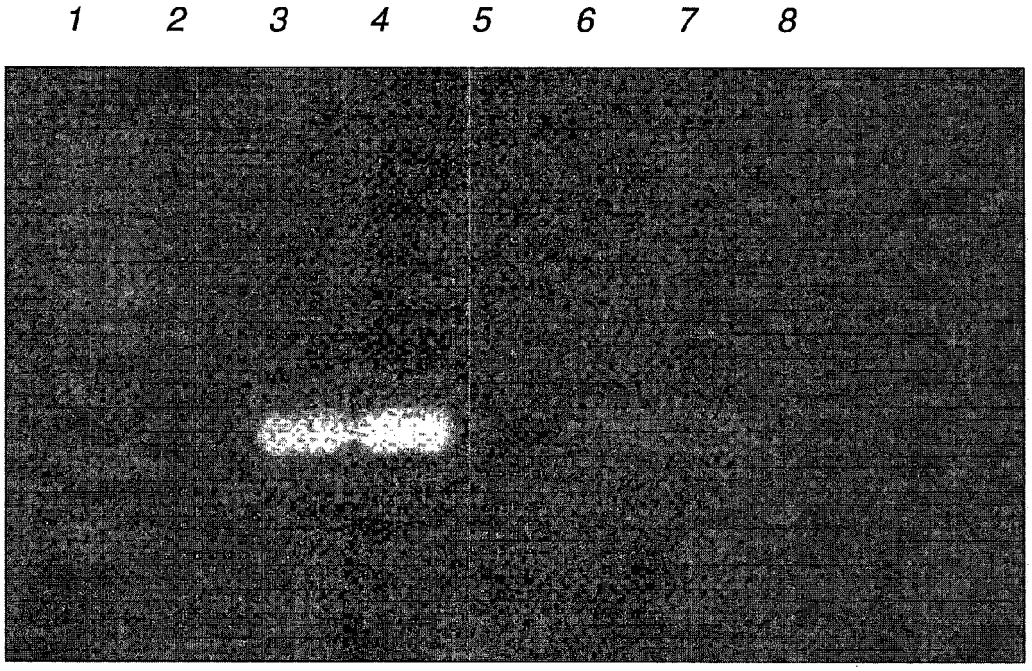


Fig.9

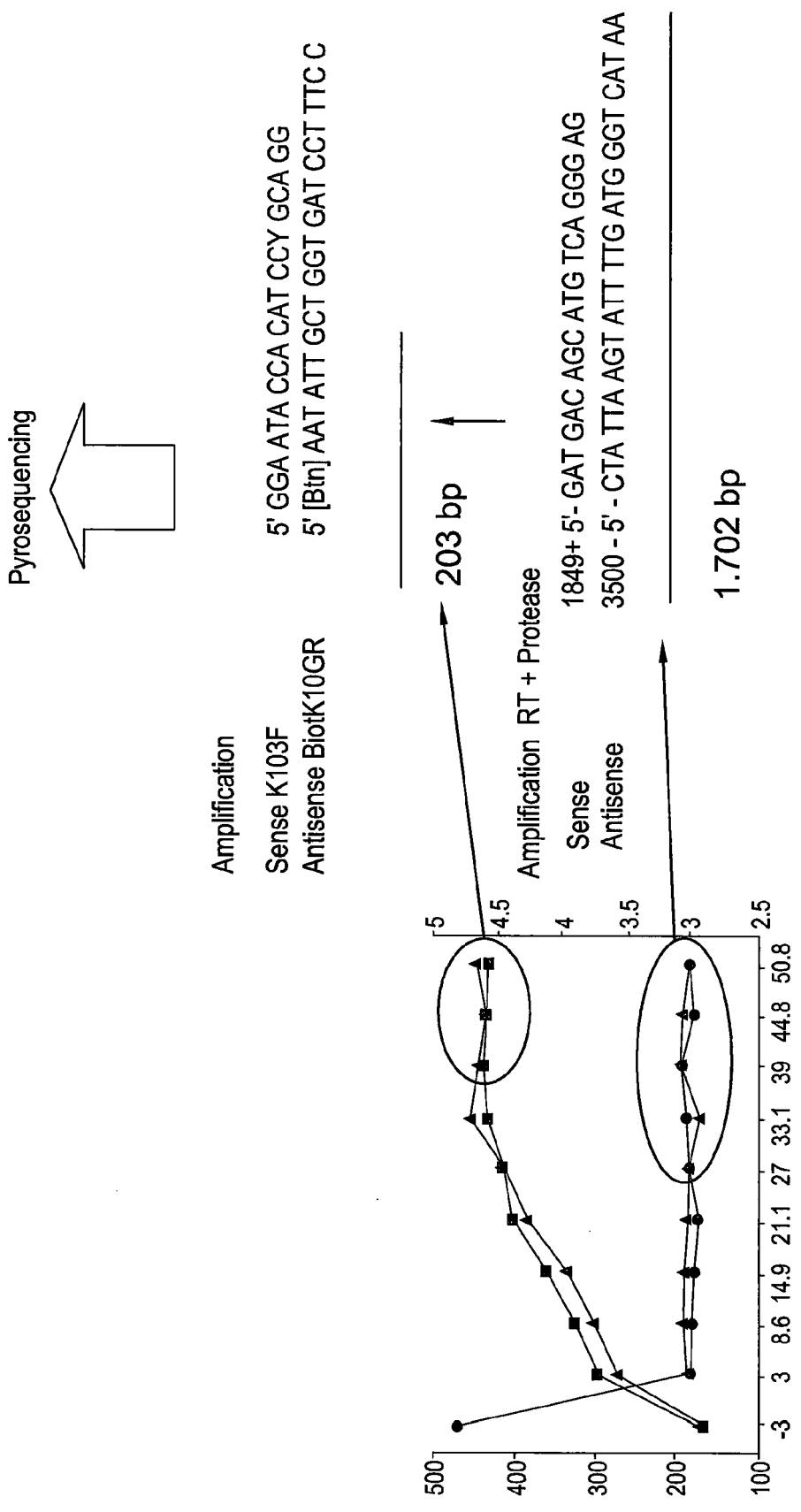

Pyrosequencing
Amplification
Sense K103F
Antisense BiotK10GR
5' GGA ATA CCA CAT CCY GCA GG
5' [Btn] AAT ATT GCT GGT GAT CCT TTC C
203 bp
Amplification RT + Protease
Sense
Antisense
1849+ 5'- GAT GAC AGC ATG TCA GGG AG
3500 - 5' - CTA TTA AGT ATT TTG ATG GGT CAT AA
1.702 bp
500
400
300
200
100
-5
-4.5
-4
-3.5
-3
2.5
-3
3
8.6
14.9
21.1
27
33.1
39
44.8
50.8

Fig.10

Biotage

PyroMark ID - 110126 muestras Can Ruti HIV - 1/26/2011 11:43:20 AM
Well A7 (110126 muestras Can Ruti HIV) (SSB)
Entry ID:HIV
Sample ID:HIV
Result: AAATTGCCAA TGCCCAAGGC CAAATTGCAA TGATATAAA
Quality: Check (quality window: 20)
0 passed, 1 - 37 check, 38 - 39 failed

>☐ gb I FJ670525.1 I HIV-1 strain ES X2425-2 from Spain, complete genome
Length = 8906

Score = 30.2 bits (15), Expect = 5.3
Identities = 15/15 (100%), Gaps = 0/15 (0)%)
Strand=Plus/Plus

```
Query  22    AAATTGCAATGATAT  36
             ||||||||||||||| 
Sbject 6047  AAATTGCAATGATAT  6061
```

>☐ gb I HQ110695 .1 I HIV-1 clone 1993b6 from USA envelope glycoprotein (env) gene, partial cds
Length = 2613

Score = 28.2 bits (14), Expect = 21
Identities = 14/14 (100%), Gaps = 0/14 (0)%)
Strand=Plus/Plus

```
Query  22    AAATTGCAATGATA  35
             ||||||||||||||
Sbject 384   AAATTGCAATGATA  397
```

>☐ gb I HQ110694 .1 I HIV-1 clone 1993b7 from USA envelope glycoprotein (env) gene, partial cds
Length = 2613

Score = 28.2 bits (14), Expect = 21
Identities = 14/14 (100%), Gaps = 0/14 (0)%)
Strand=Plus/Plus

```
Query  22    AAATTGCAATGATA  35
             ||||||||||||||
Sbject 384   AAATTGCAATGATA  397
```

Fig.11