Figure 1

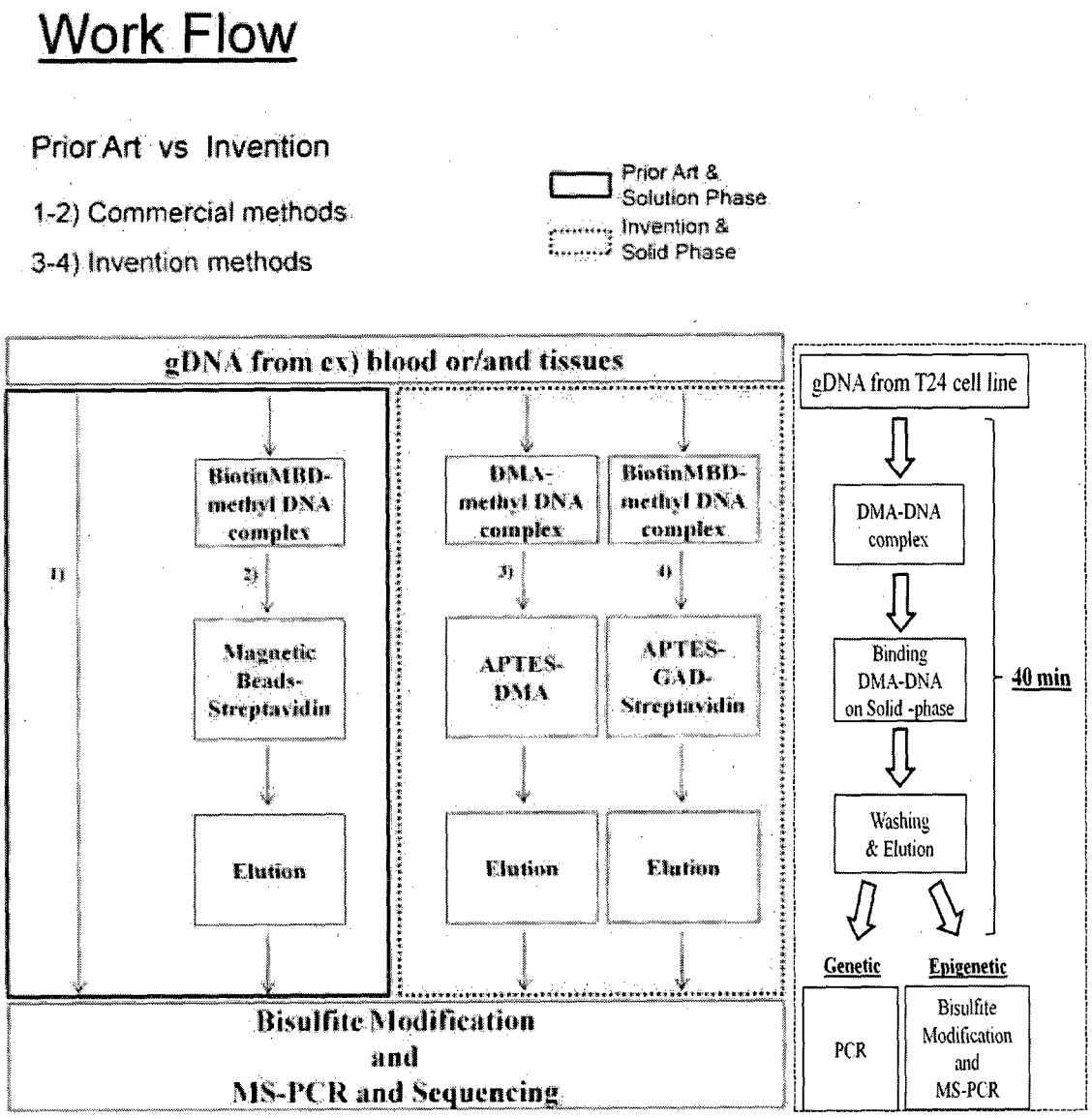

Work Flow
Prior Art vs Invention
1-2) Commercial methods
3-4) Invention methods
Prior Art & Solution Phase
Invention & Solid Phase
gDNA from ex) blood or/and tissues
BiotinMBD-methyl DNA complex
Magnetic Beads-Streptavidin
Elution
DMA-methyl DNA complex
BiotinMBD-methyl DNA complex
APTES-DMA
APTES-GAD-Streptavidin
Elution
Elution
Bisulfite Modification and MS-PCR and Sequencing
gDNA from T24 cell line
DMA-DNA complex
Binding DMA-DNA on Solid -phase
Washing & Elution
40 min
Genetic
Epigenetic
PCR
Bisulfite Modification and MS-PCR

Figure 2

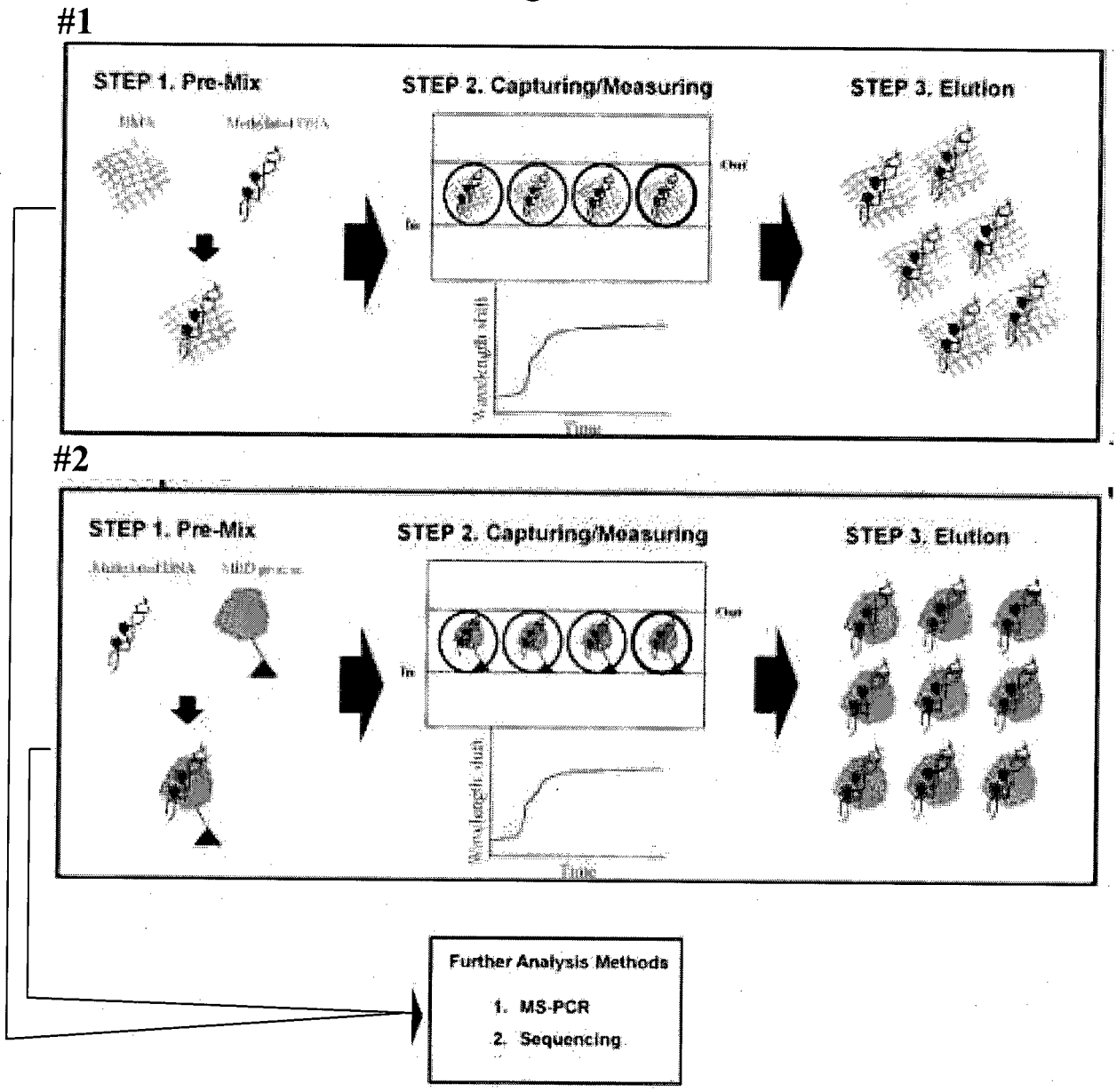
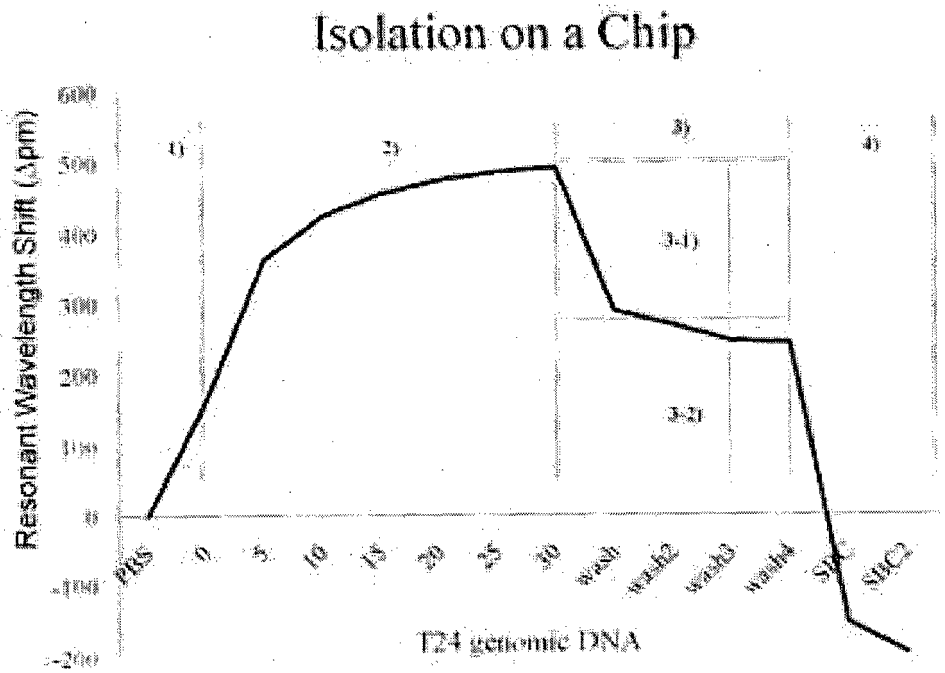

#1
STEP 1. Pre-Mix
STEP 2. Capturing/Measuring
STEP 3. Elution
#2
STEP 1. Pre-Mix
STEP 2. Capturing/Measuring
STEP 3. Elution
Further Analysis Methods
1. MS-PCR
2. Sequencing

Figure 3

A

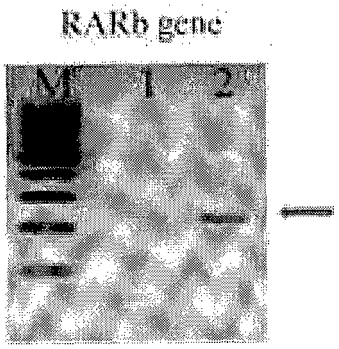


1) PBS
2) Mixture T24 DNA+ DMA binding
3) PBS
4) 0.5M sodium bicarbonate (pH 10.6)

3-1) Non-specific binding
3-2) Methyl DNA and DMA

B

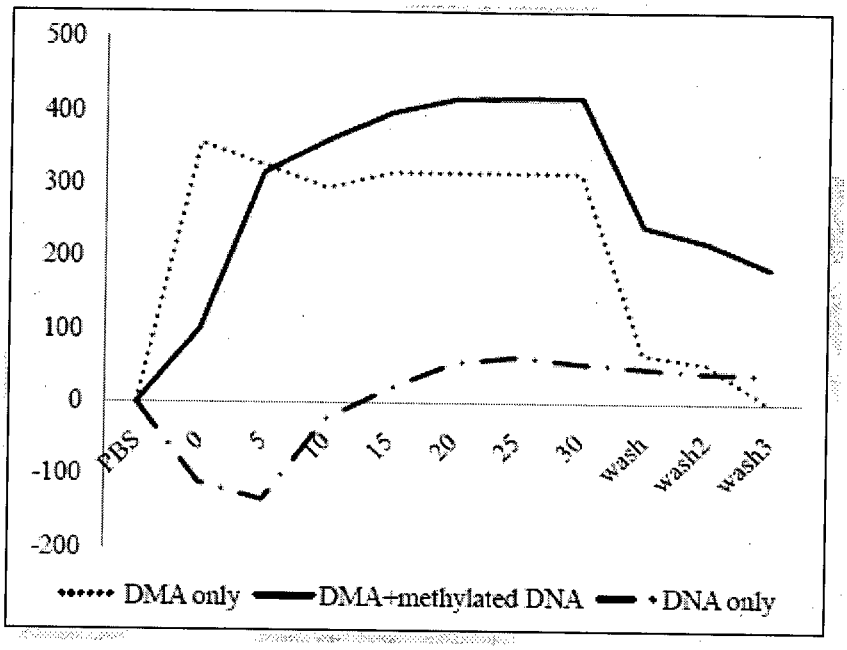
Confirmation by PCR



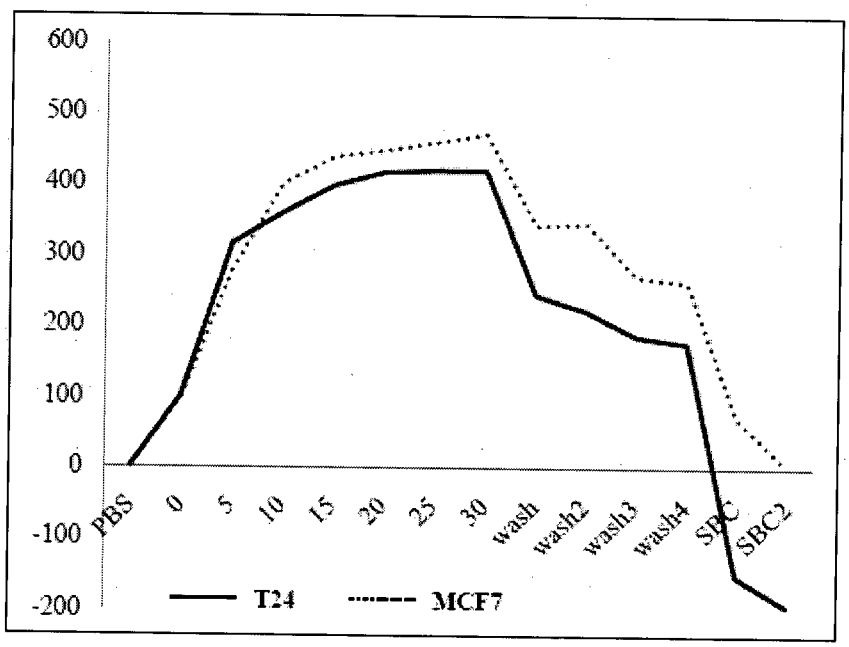
1) T24 gDNA
2) T24 gDNA with Chip system

Figure 4

A


500
400
300
200
100
0
-100
-200
PBS
0
5
10
15
20
25
30
wash
wash2
wash3
DMA only
DMA+methylated DNA
DNA only

B


600
500
400
300
200
100
0
-100
-200
PBS
0
5
10
15
20
25
30
wash
wash2
wash3
wash4
SBC
SBC2
T24
MCF7