

FIG. 1

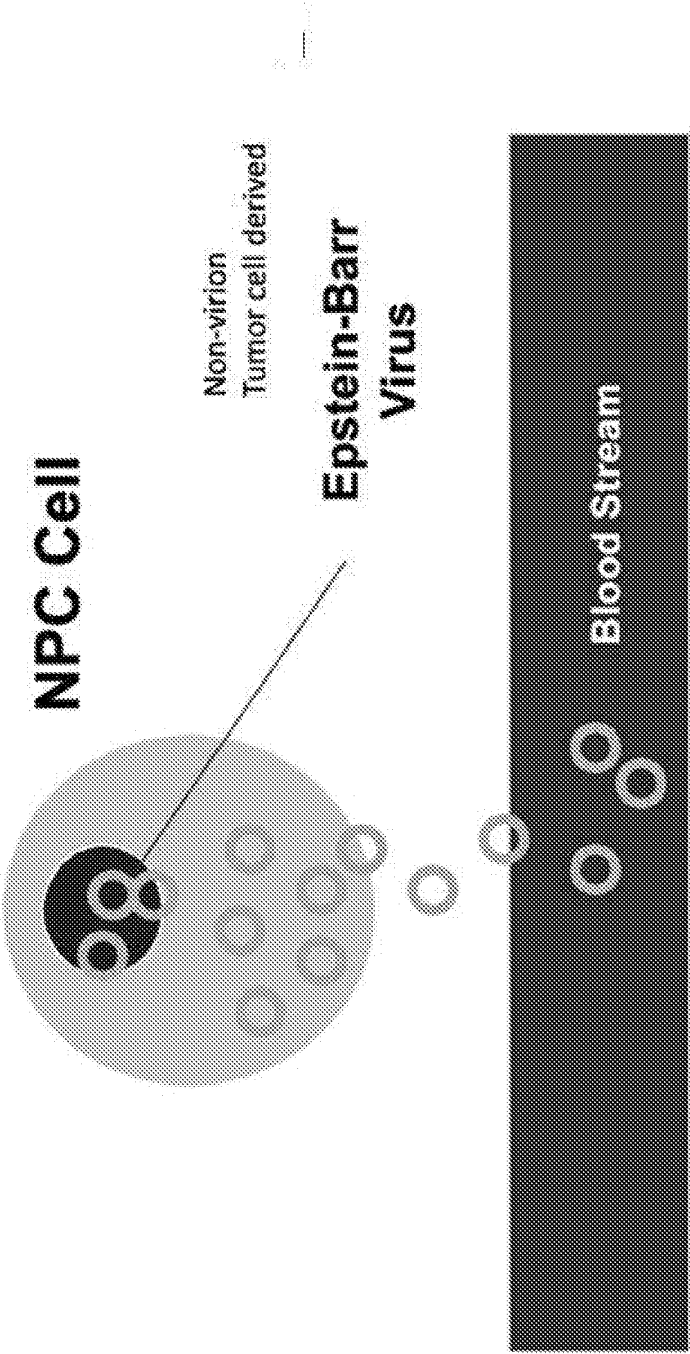
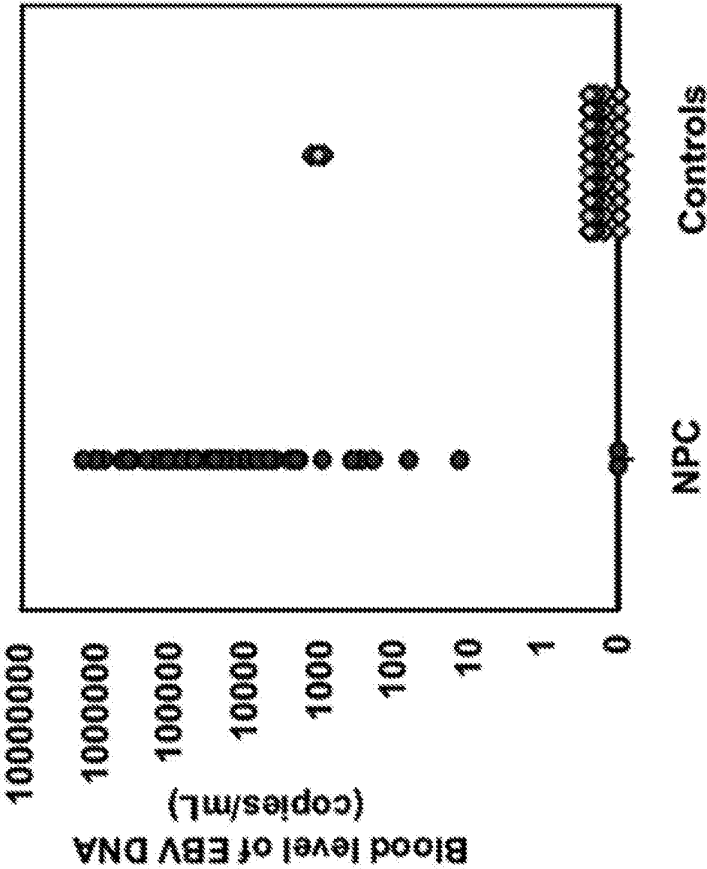
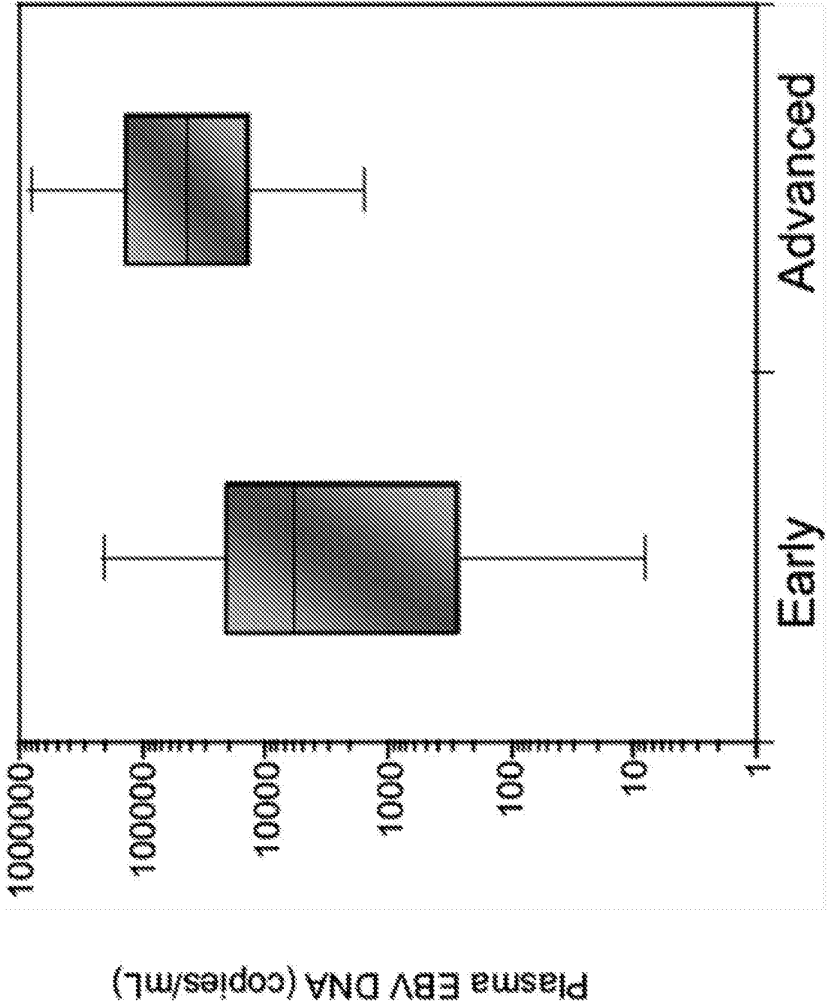


FIG. 2



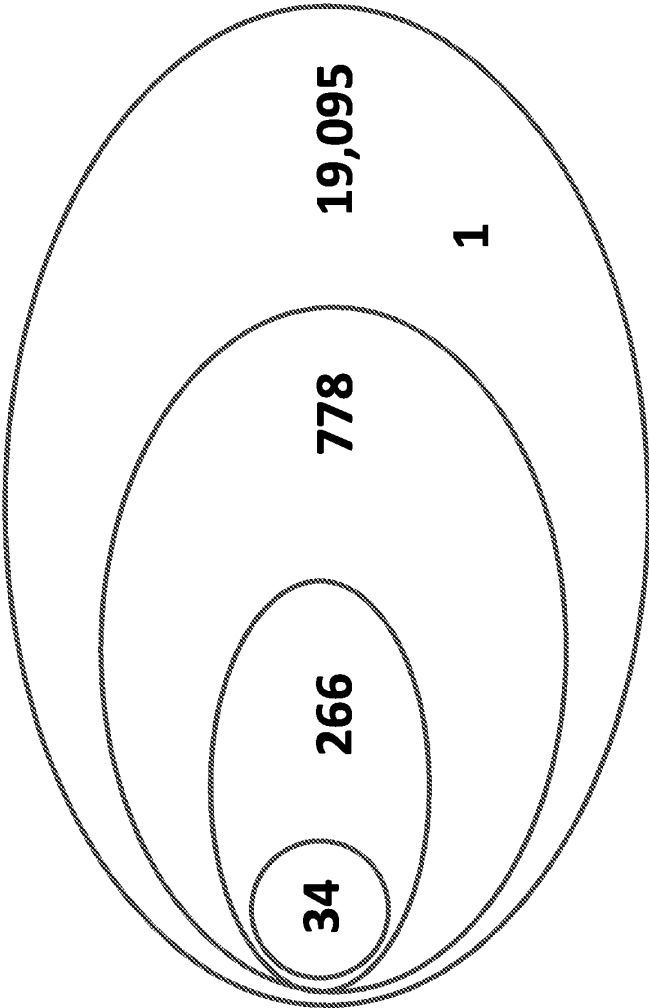
Lo, Y. M. Dennis, et al. "Quantitative Analysis of Cell-free Epstein-Barr Virus DNA in Plasma of Patients with Nasopharyngeal Carcinoma." *Cancer Research*, March 1999.

FIG. 3



Lo, Y. M. Dennis, et al. "Quantitative Analysis of Cell-free Epstein-Barr Virus DNA in Plasma of Patients with Nasopharyngeal Carcinoma." *Cancer Research*, March 1999.

FIG. 4



Groups	N
Total number of subjects tested	20,174
EBV positive in First assay	1,078
EBV positive in Second assay	300
Confirmed NPC by endoscopy	34
Confirmed NPC case missed in First Assay	1

FIG. 5

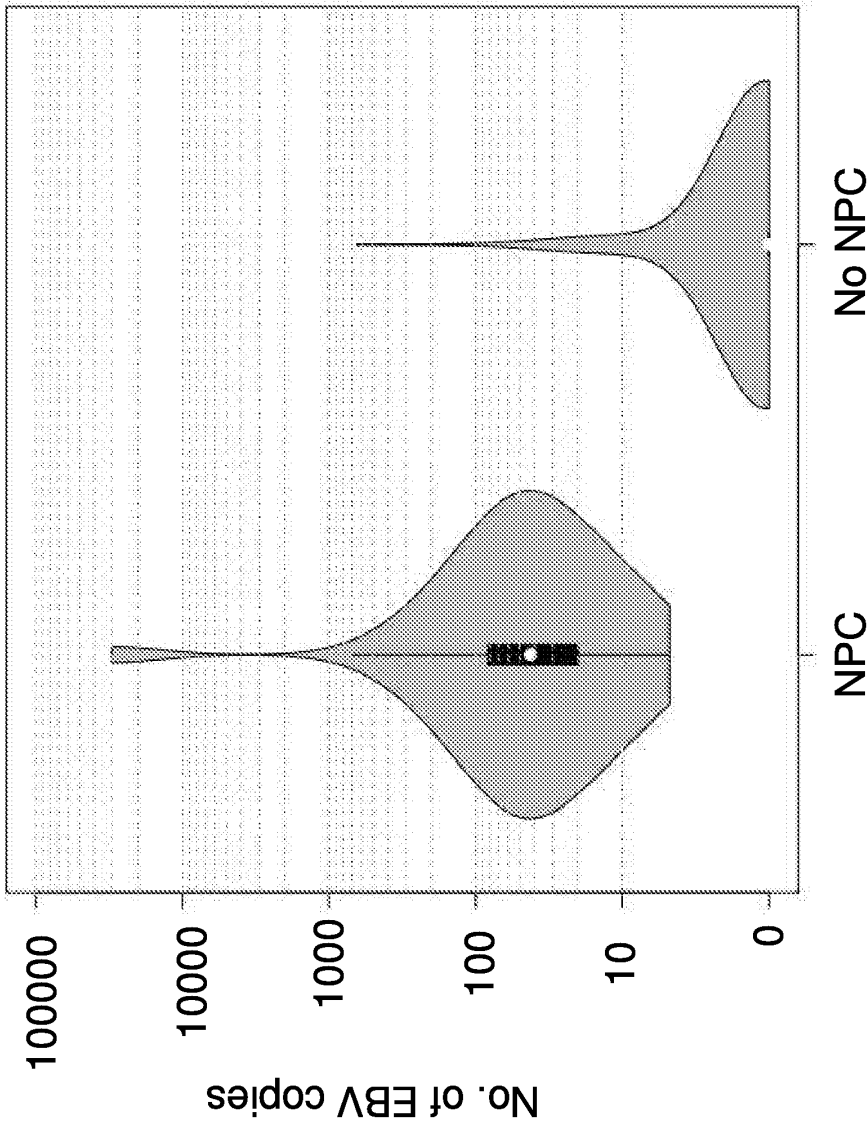


FIG. 6A

Cutoff of EBV copies	Sensitivity (%)	Specificity (%)
No cut off	97.1	94.5
10	85.7	96.1
20	74.3	98.5
30	65.7	99.3
40	54.3	99.6
50	40.0	99.7
60	31.4	99.8
70	25.7	99.8
80	25.7	99.8
90	25.7	99.9
100	22.9	99.9

FIG. 6B

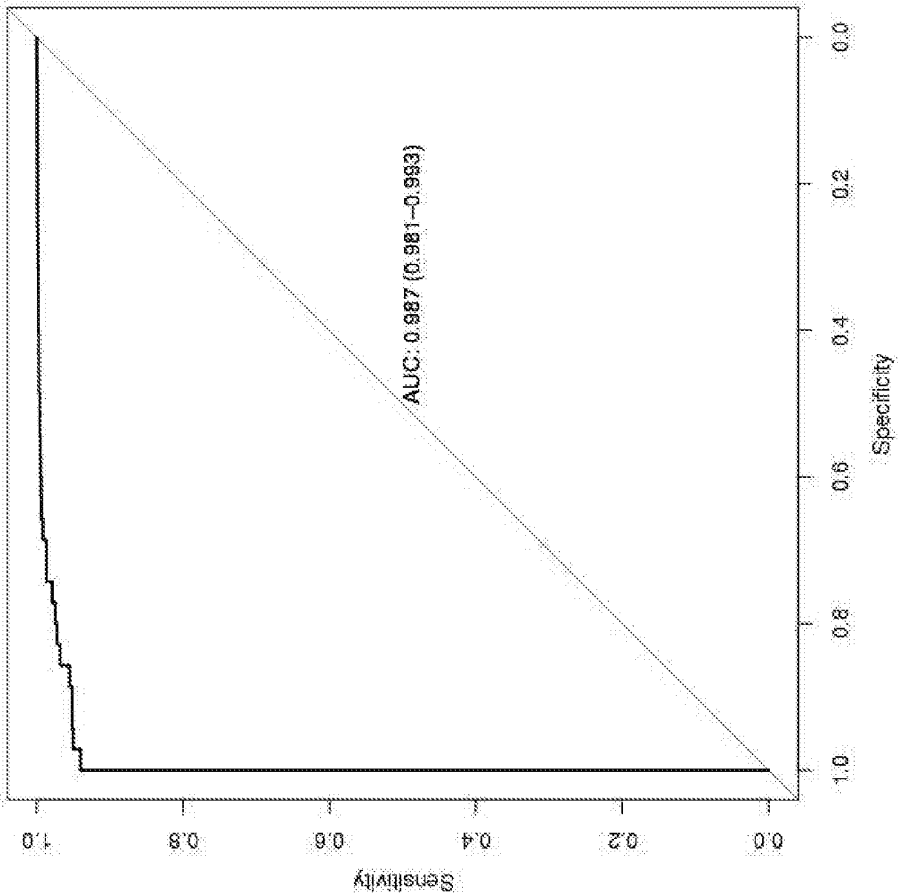


FIG. 7

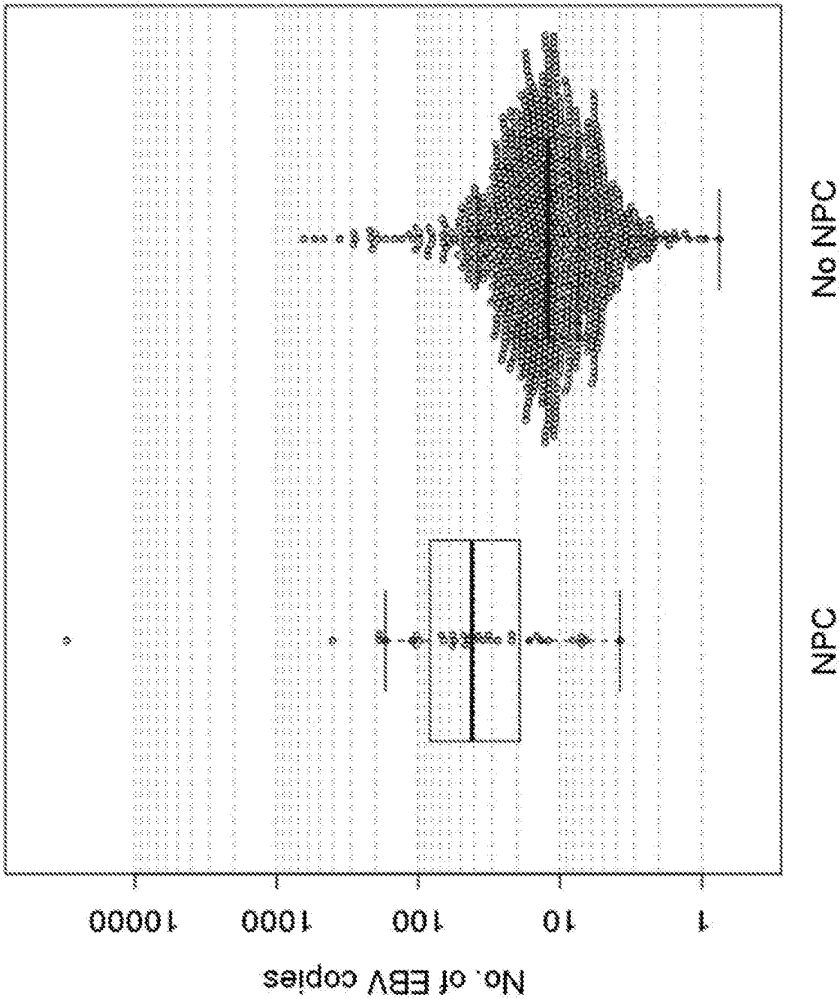


FIG. 8A

Cutoff of EBV copies	Sensitivity (%)	Specificity (%)
No cut off	97.1	12
10	85.7	38.4
20	74.3	75.7
30	65.7	89.5
40	54.3	93.5
50	40.0	95.7
60	31.4	96.5
70	25.7	97.3
80	25.7	97.4
90	25.7	97.9
100	22.9	98.1

FIG. 8B

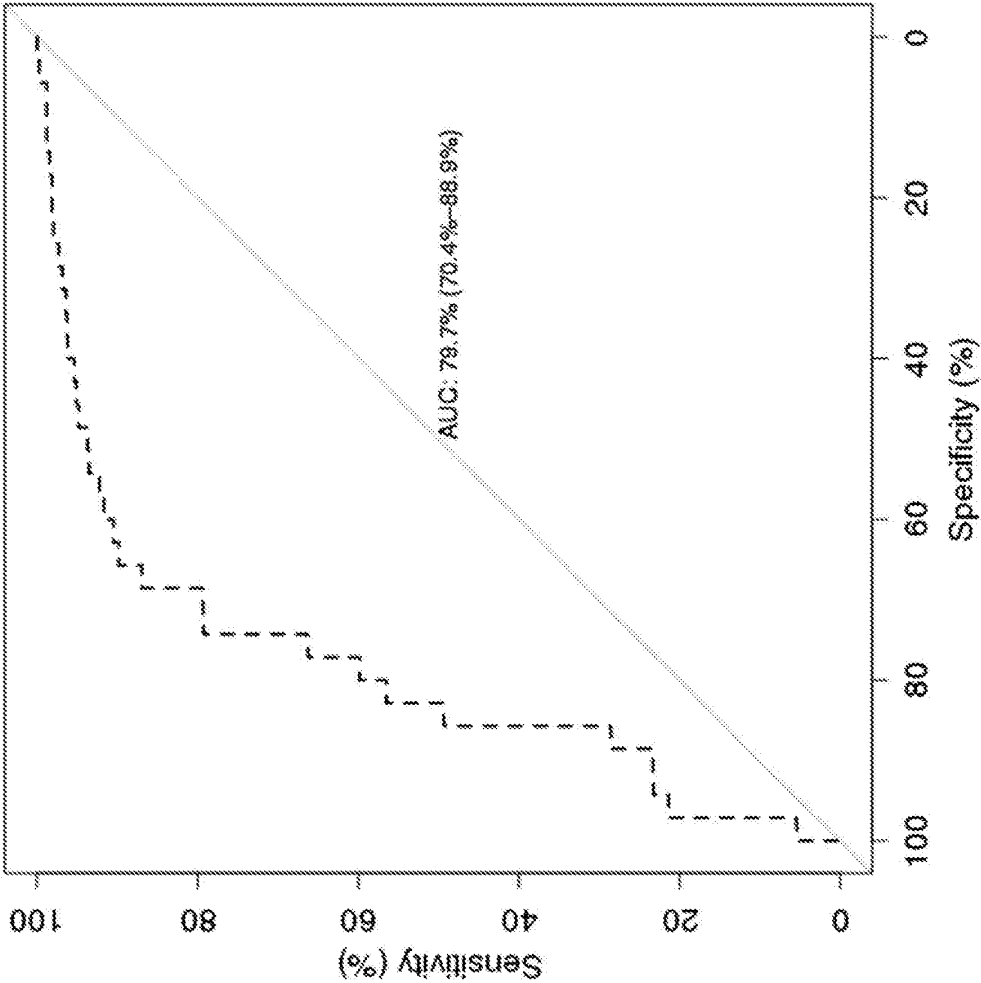
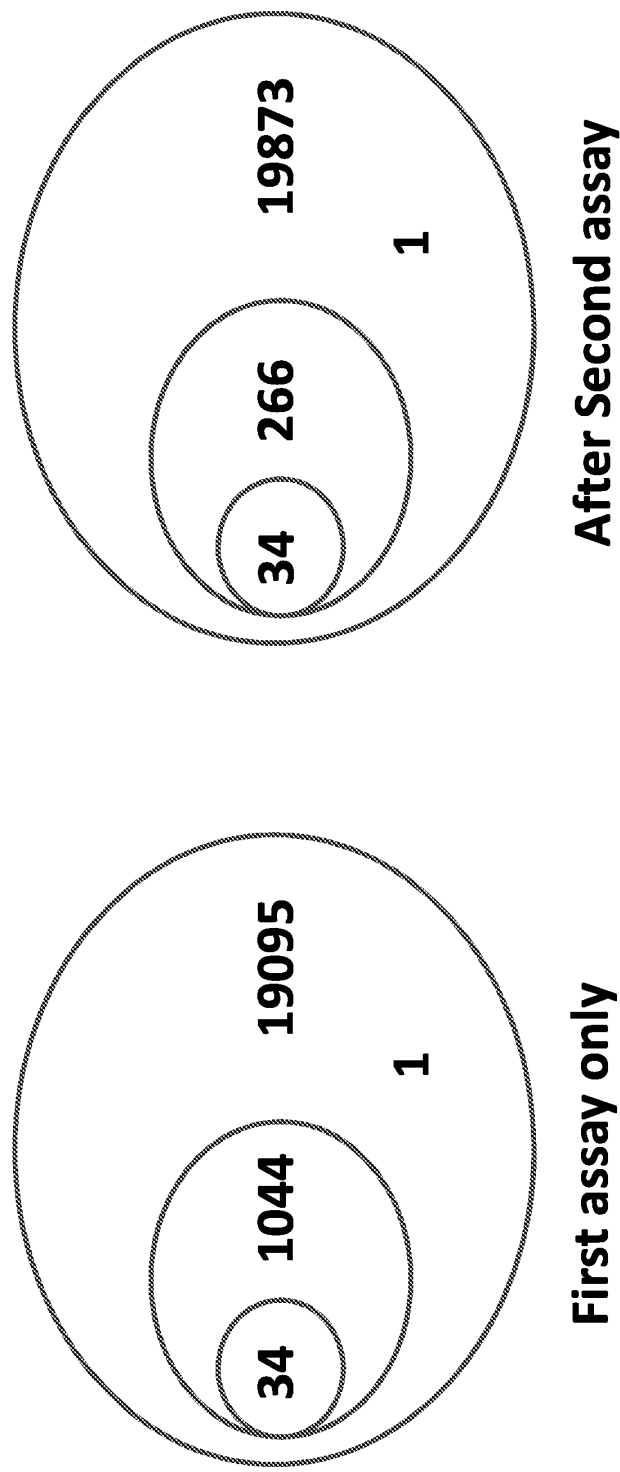


FIG. 9



	Sensitivity (%)	Specificity (%)	PPV (%)
First assay only	97.1	94.8	3.2
After Second assay	97.1	98.7	11.3

FIG. 10

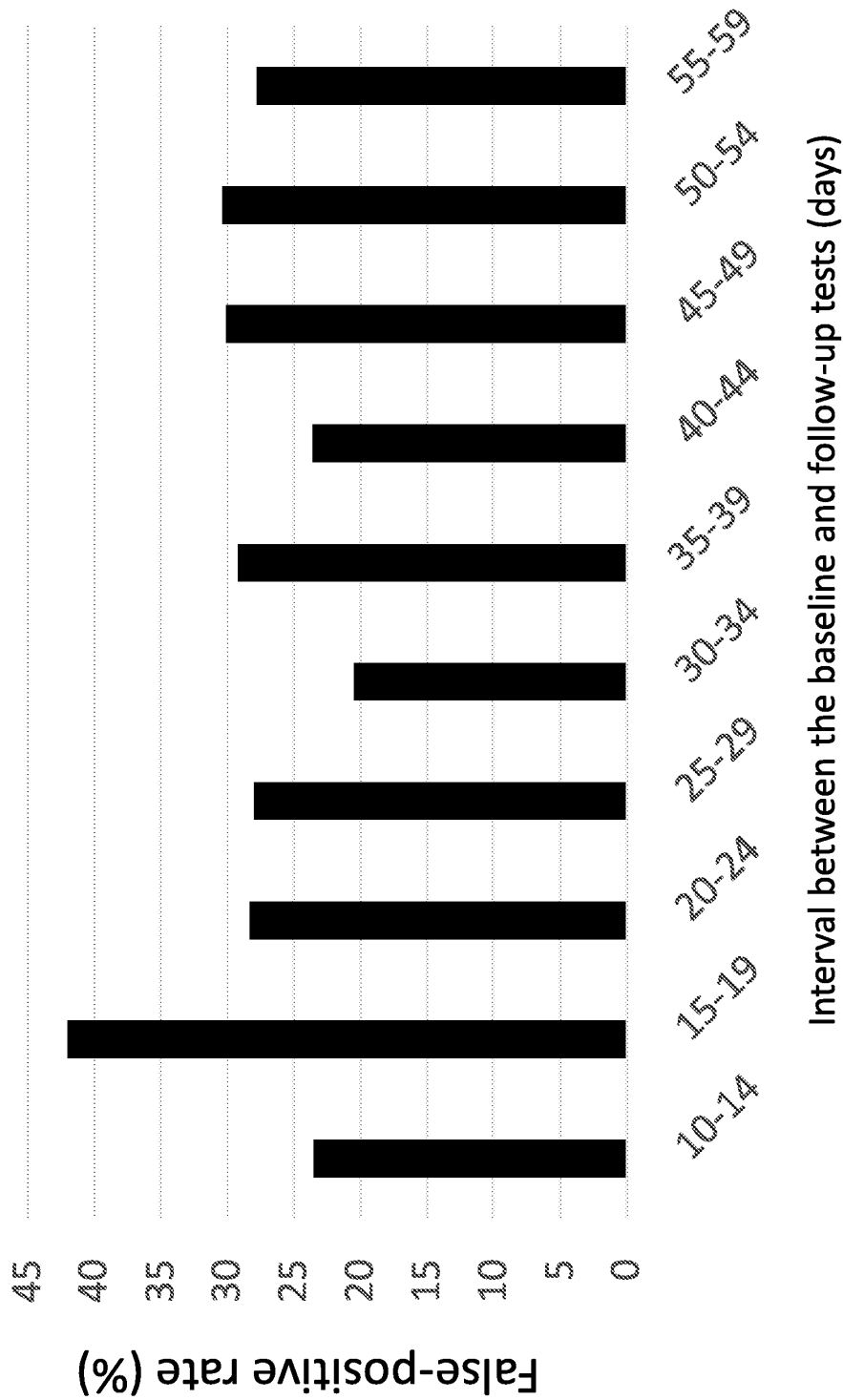


FIG. 11

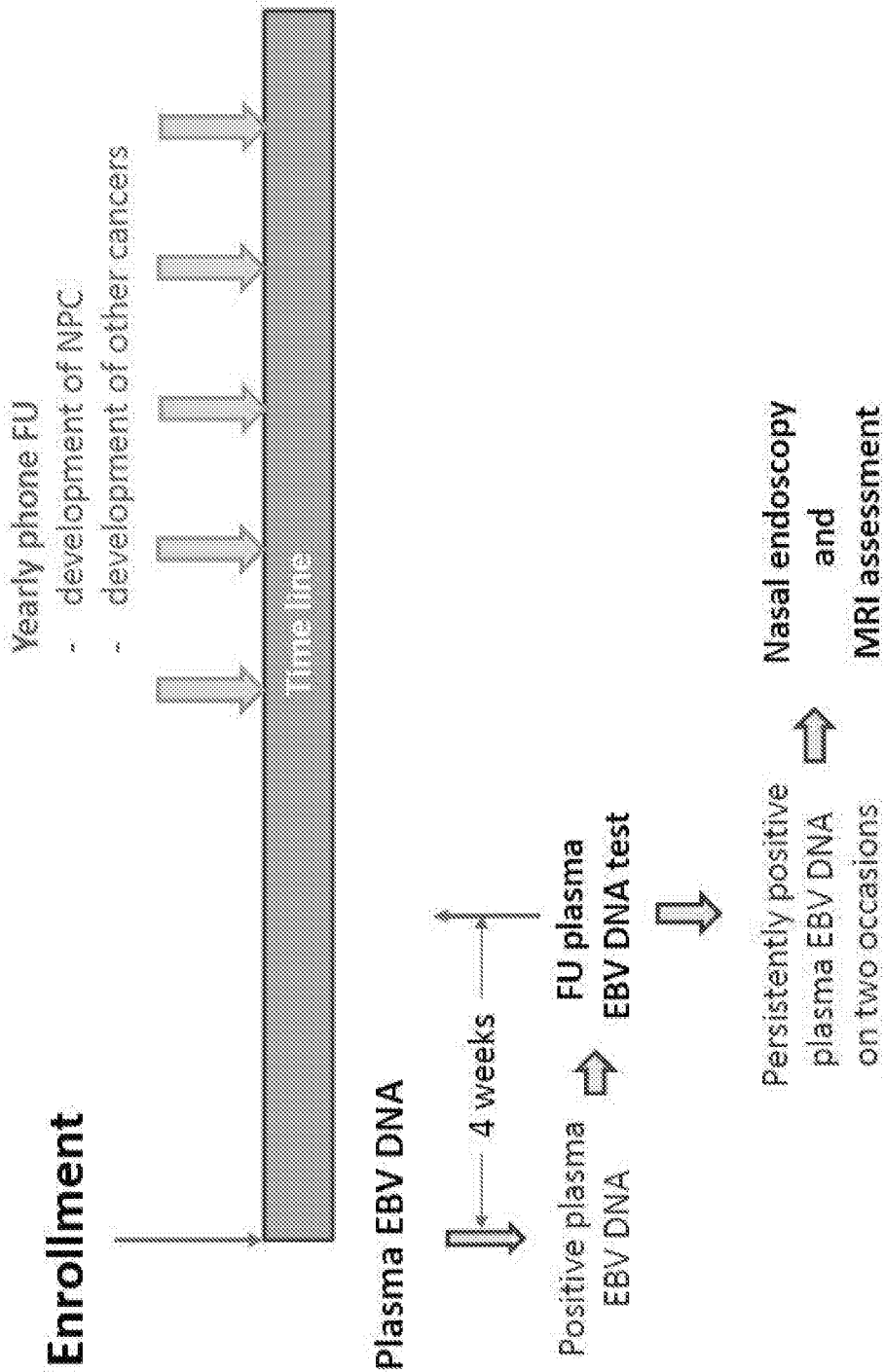
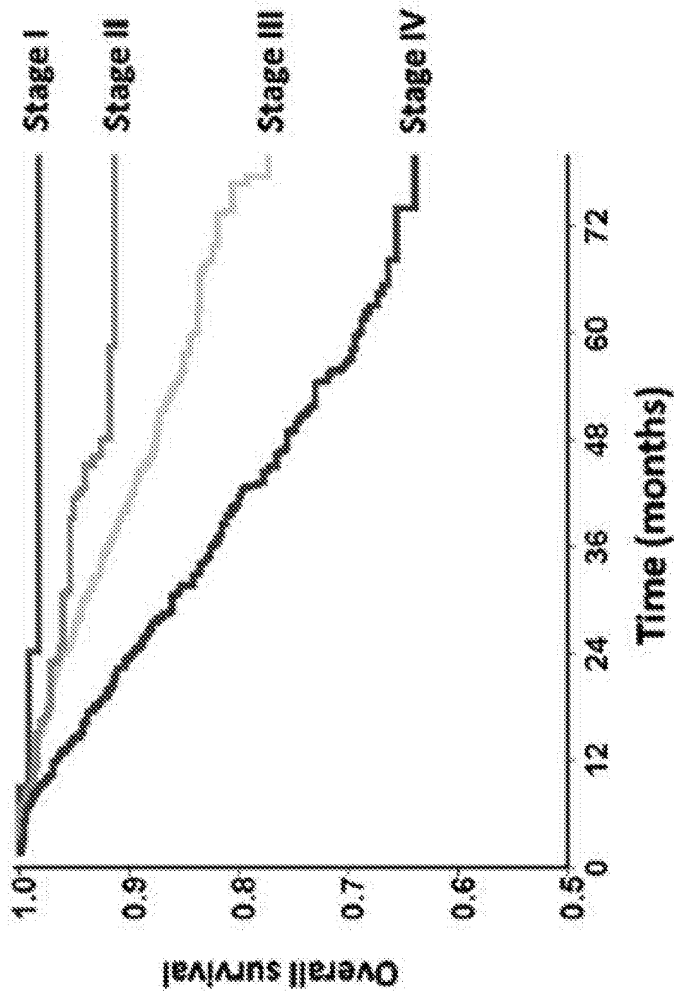


FIG. 12



Li, Jing, et al. "A Comparison between the Sixth and Seventh Editions of the UICC/AJCC Staging System for Nasopharyngeal Carcinoma in a Chinese Cohort." *PLoS One*, December 2014

FIG. 13

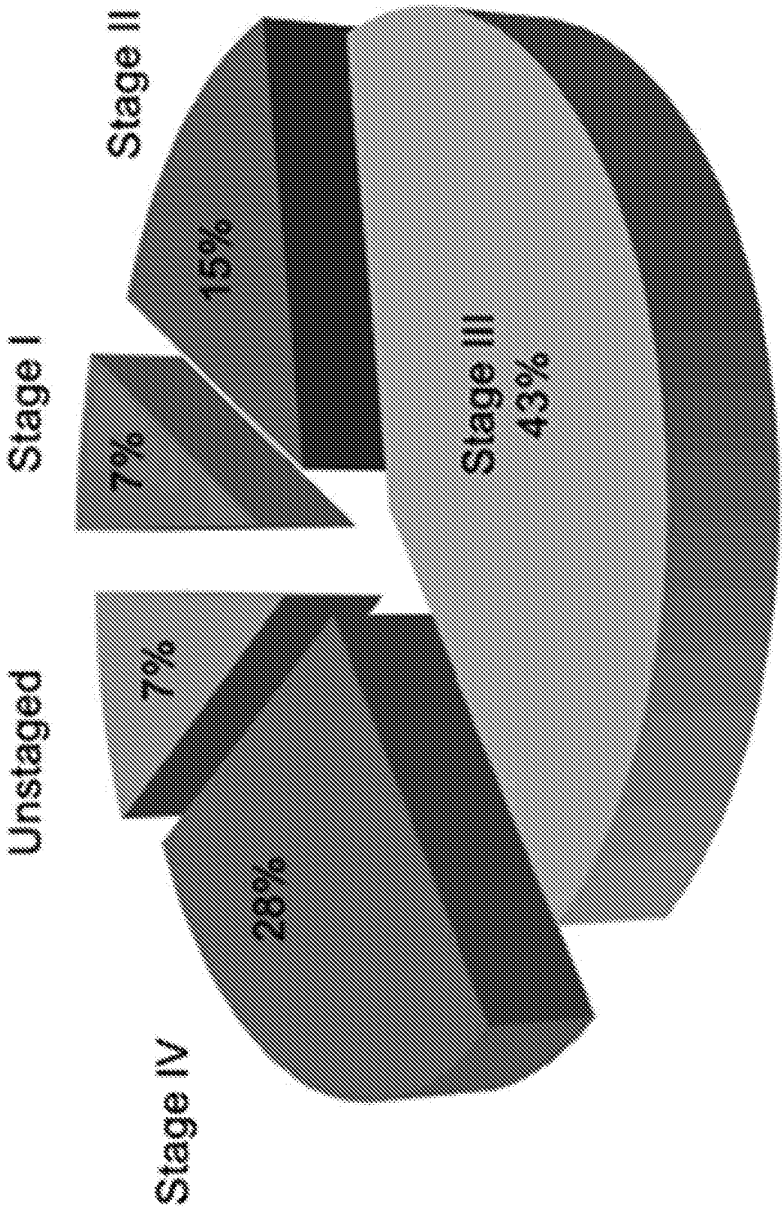


FIG. 14

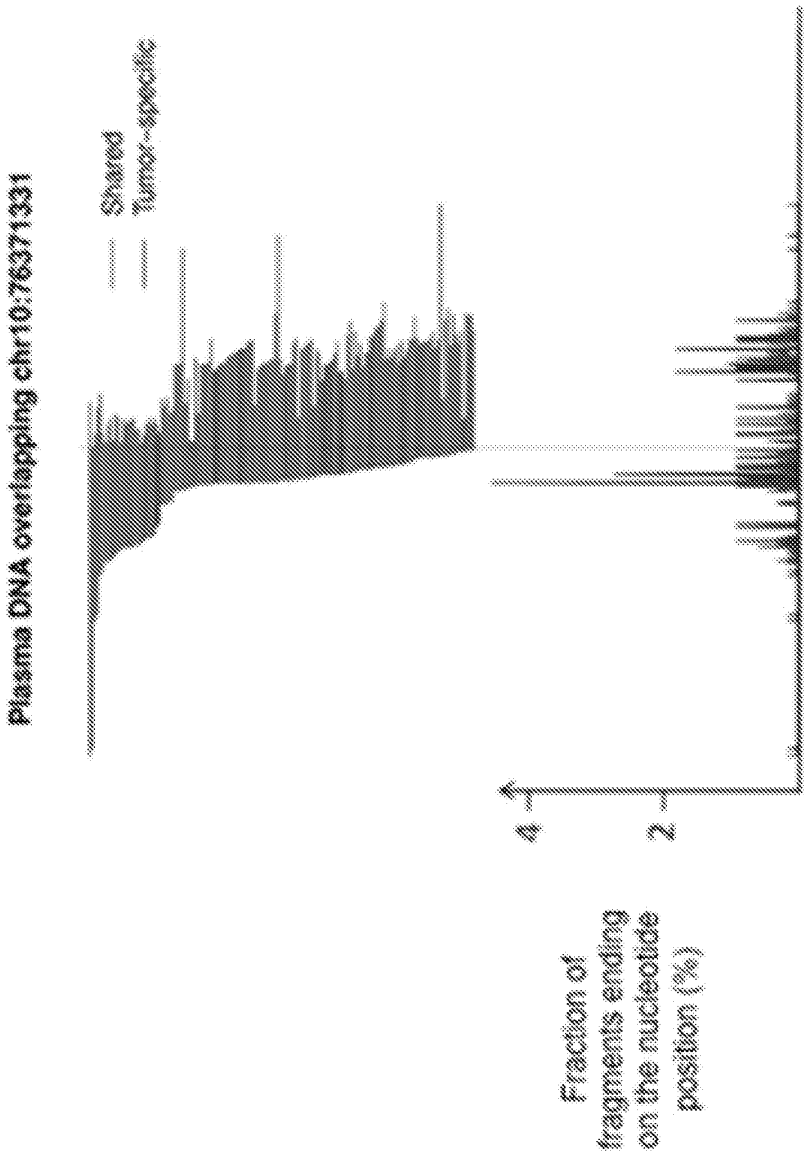


FIG. 15

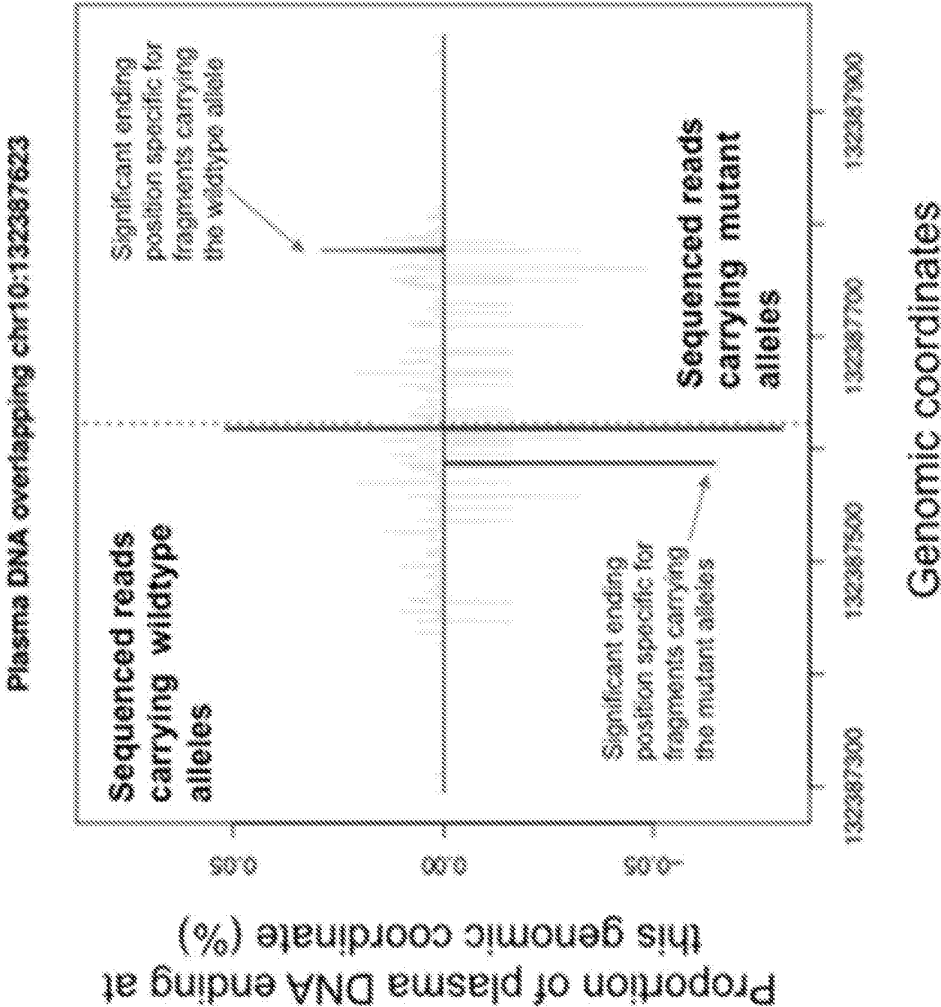


FIG. 16

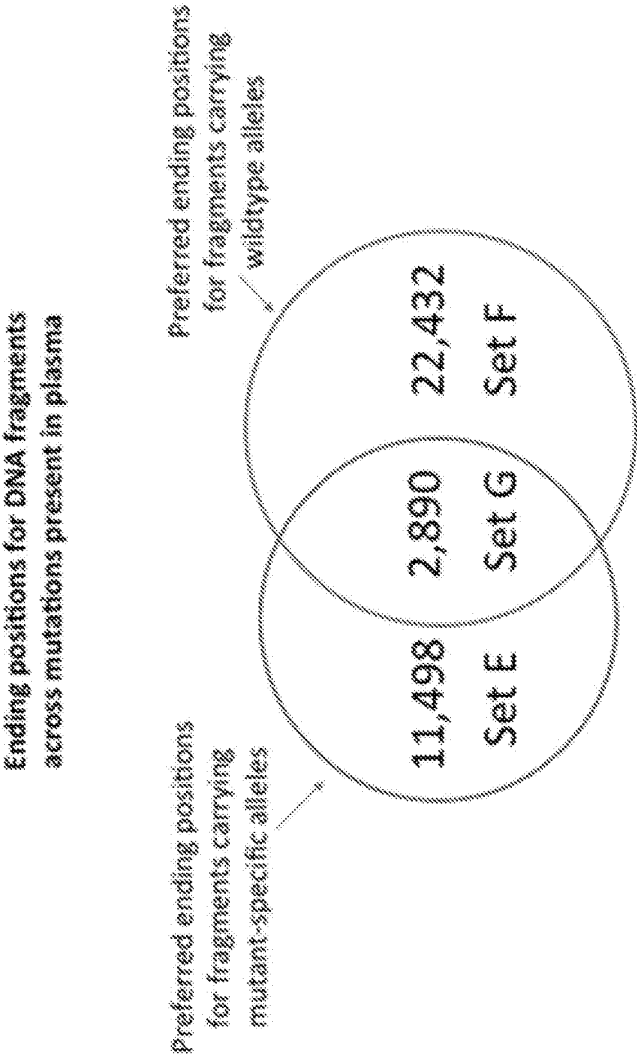


FIG. 17

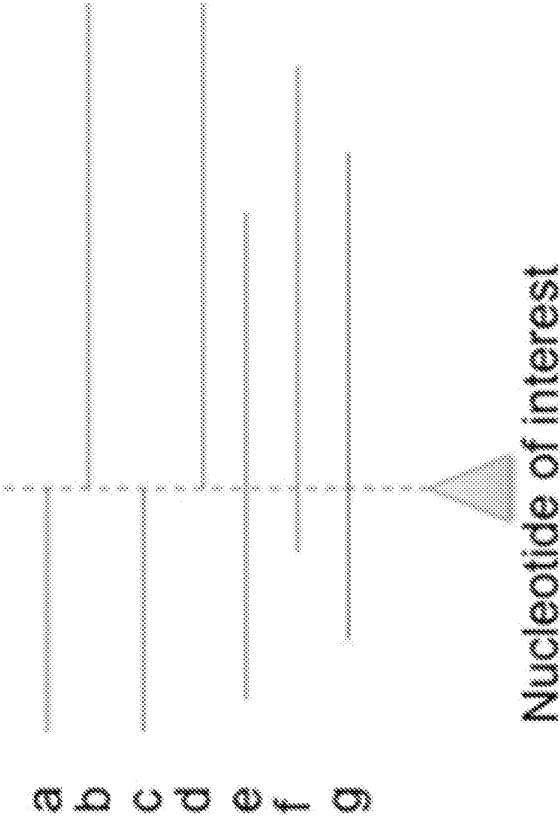


FIG. 18

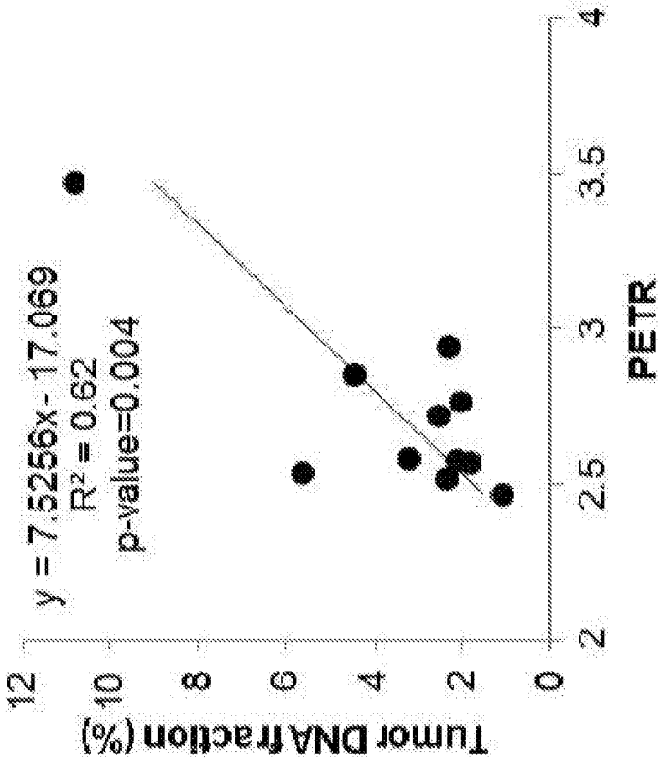
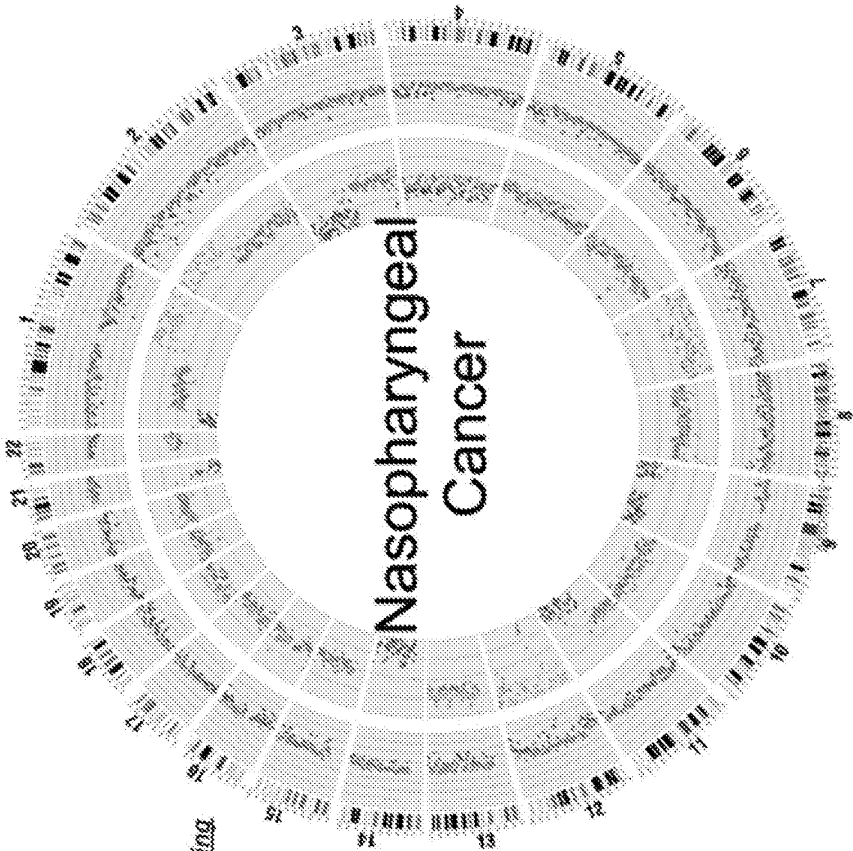


FIG. 19



Sample: TBR125
Staging: T4N3M0

Percentage of bins showing
aberrations
Methy analysis: 49.7%
CNA analysis: 42.3%

FIG. 20

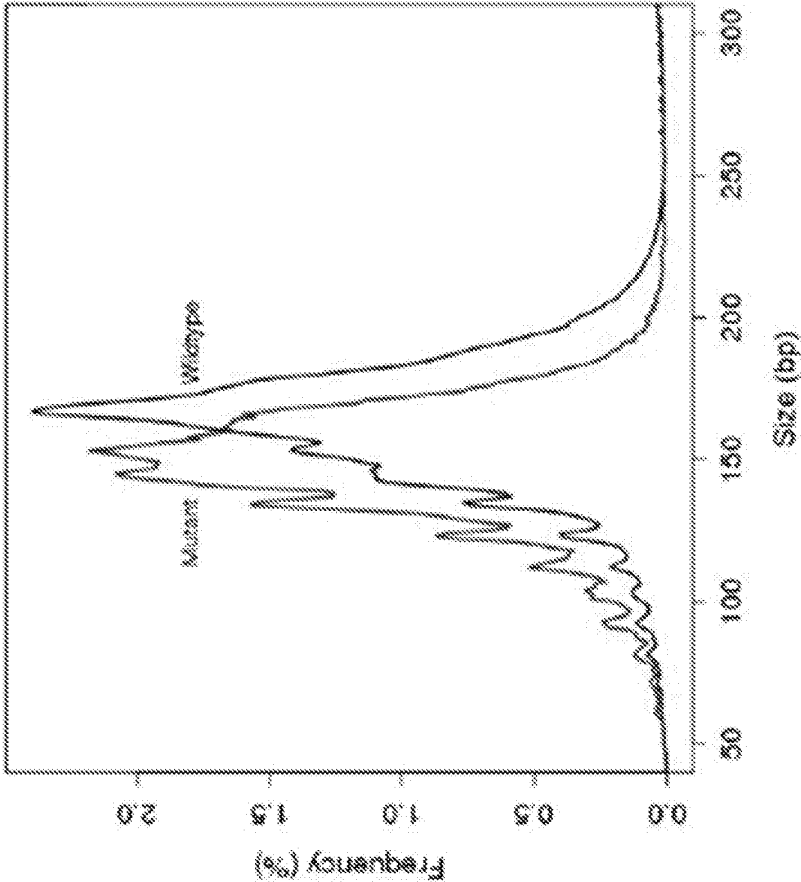
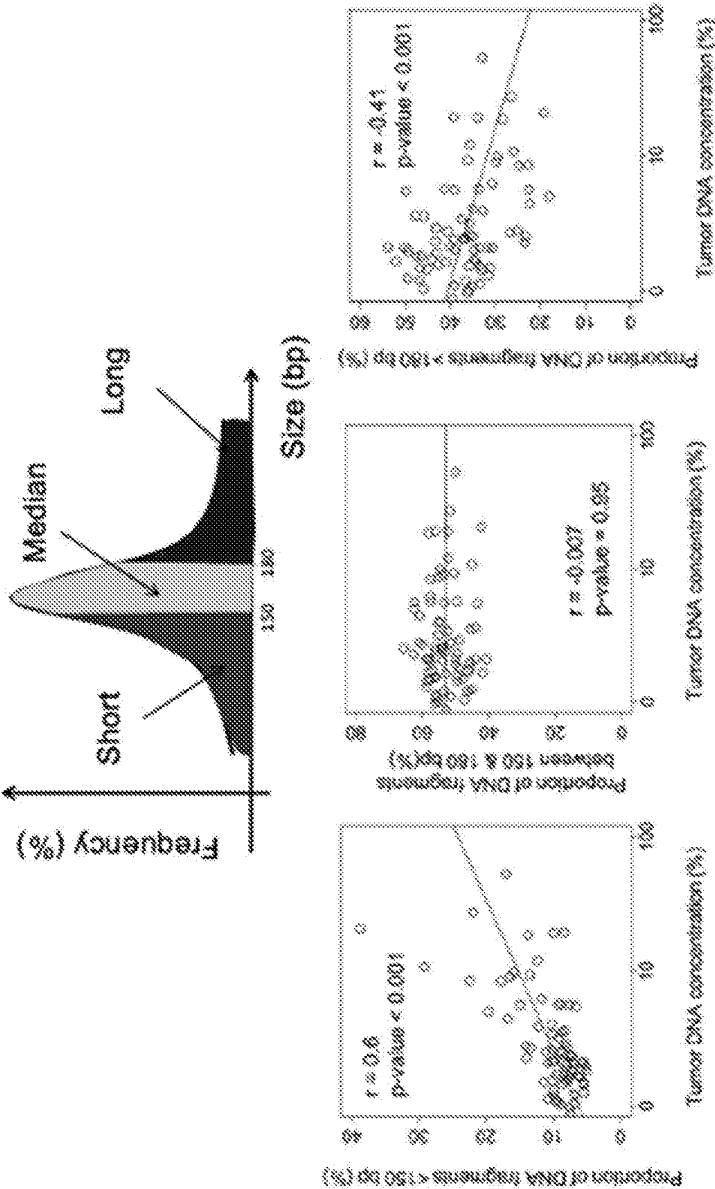
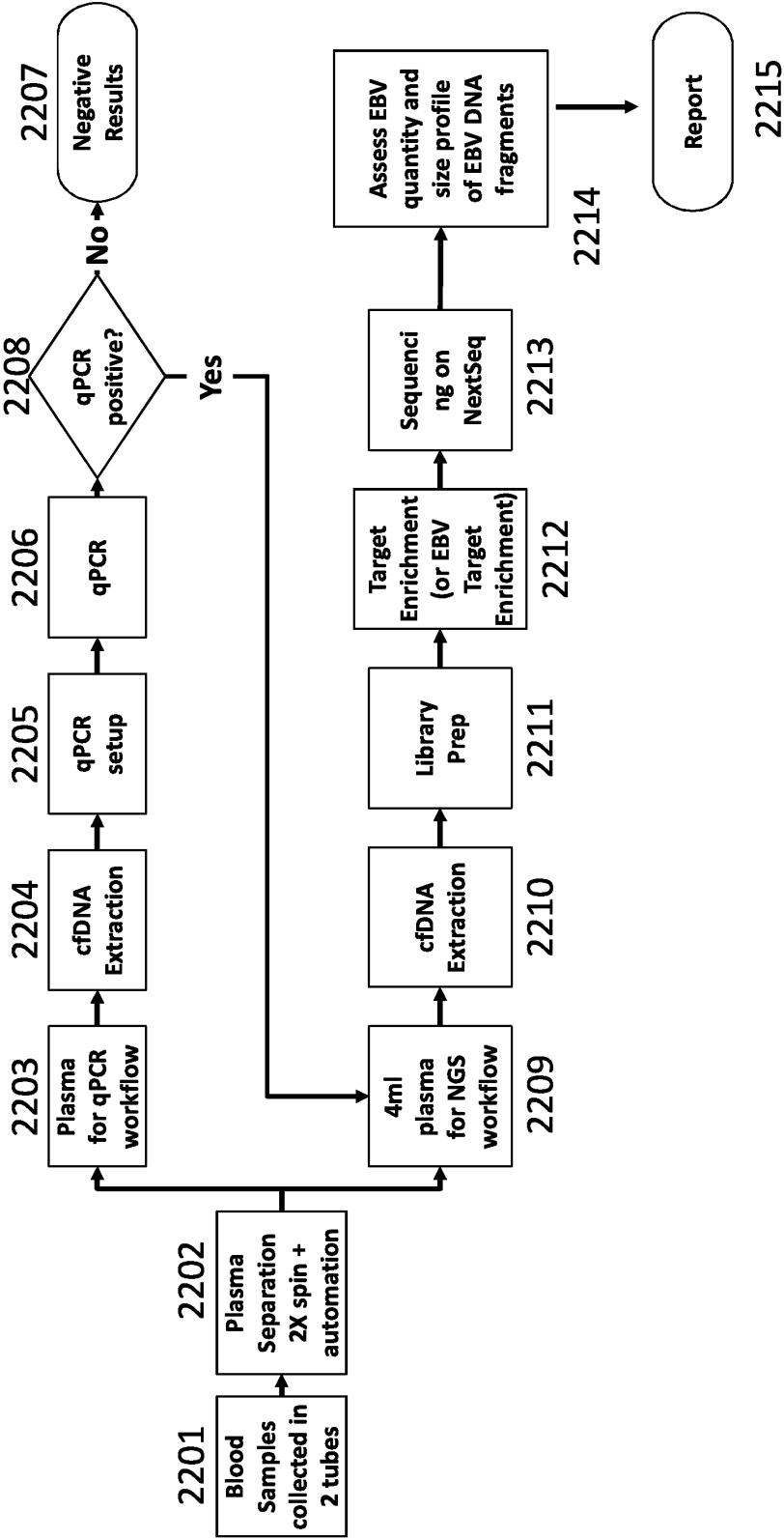


FIG. 21

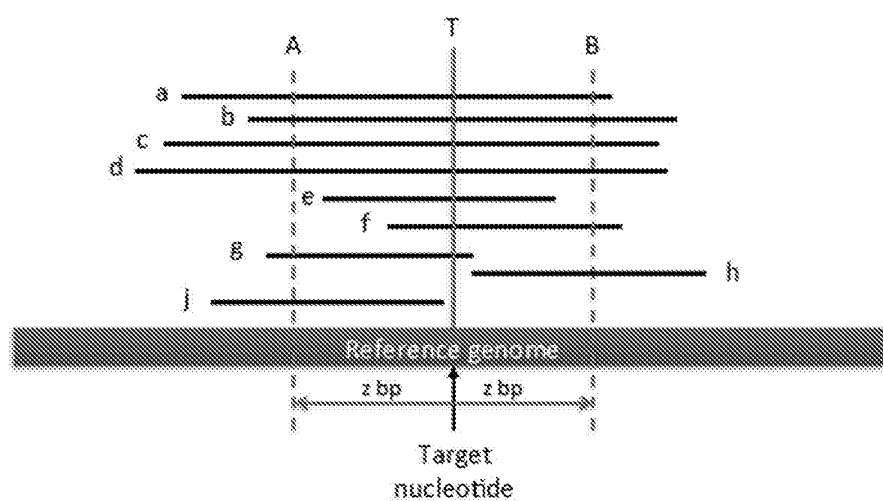


Jiang, Peiyong, et al. "Lengthening and shortening of plasma DNA in hepatocellular carcinoma patients." *PNAS*, March 2015

FIG. 22



25/101



Fragments covering z nt upstream
to z nt downstream of the target nucleotide : a, b, c and d

Fragments covering the target nucleotide: a, b, c, d, e, f and g

$$P_i = \frac{4}{7}$$

FIG. 23

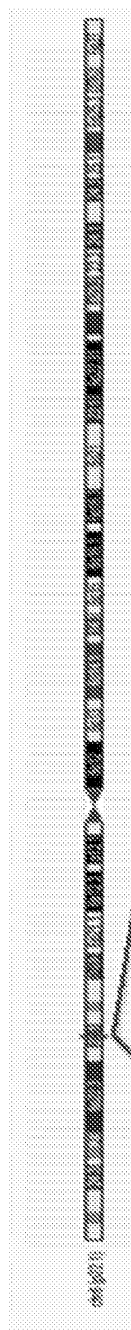


FIG. 24A

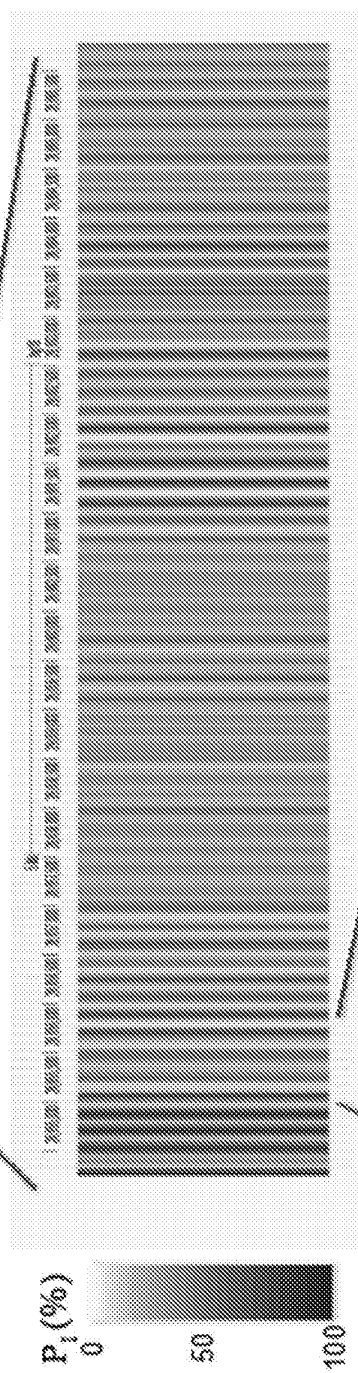
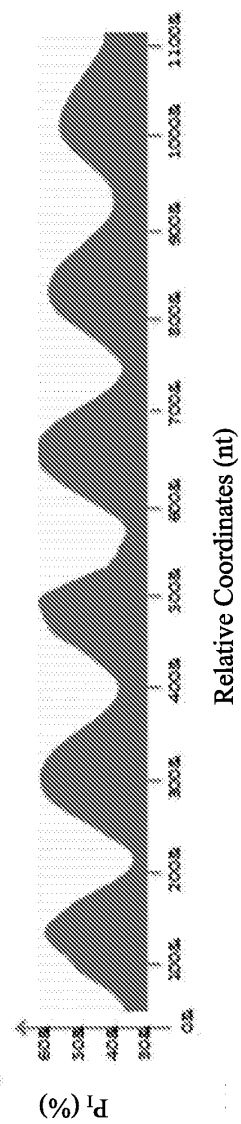


FIG. 24B



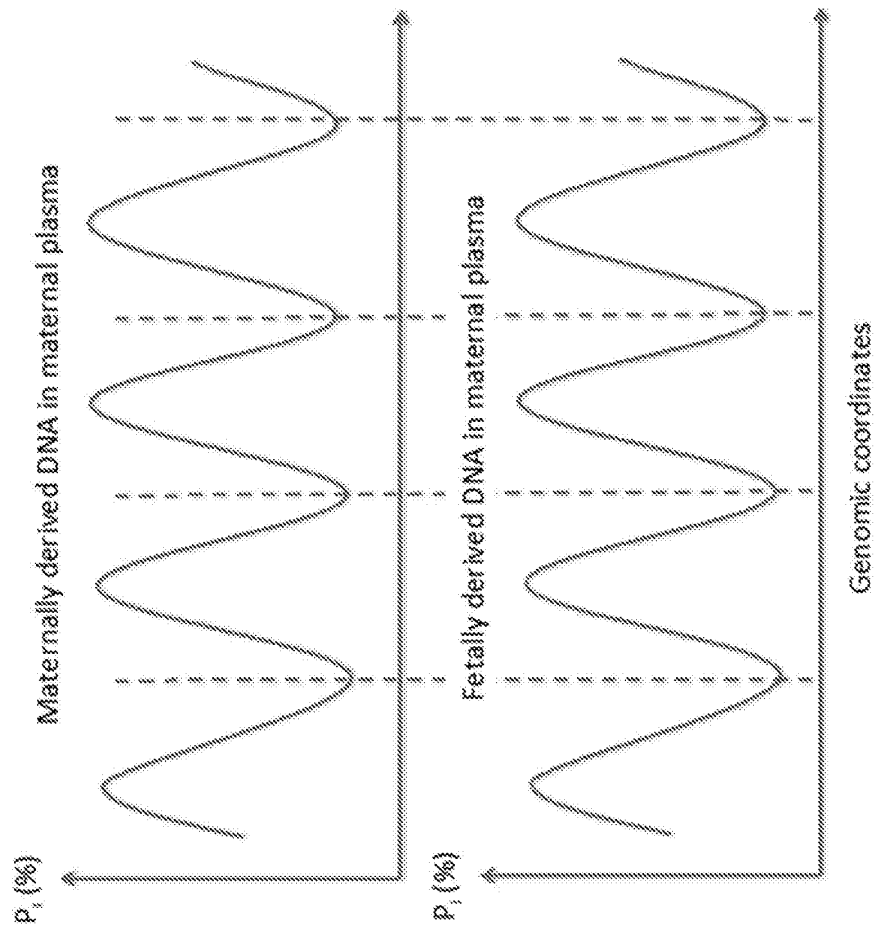
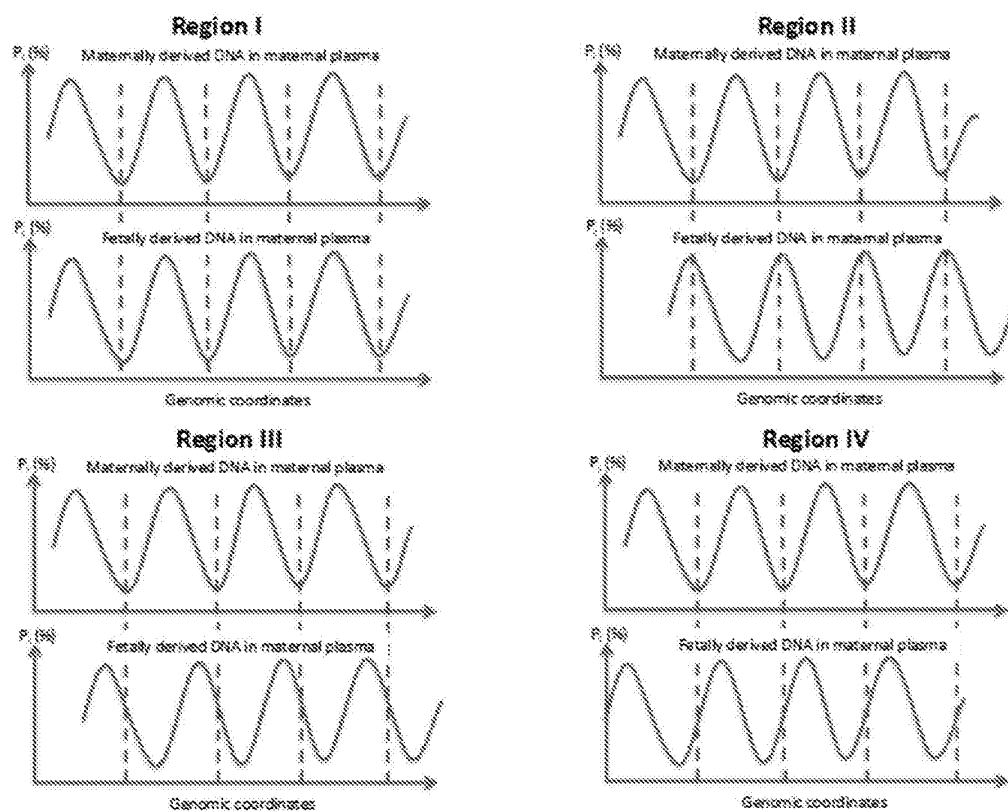


FIG. 25

**FIG. 26**

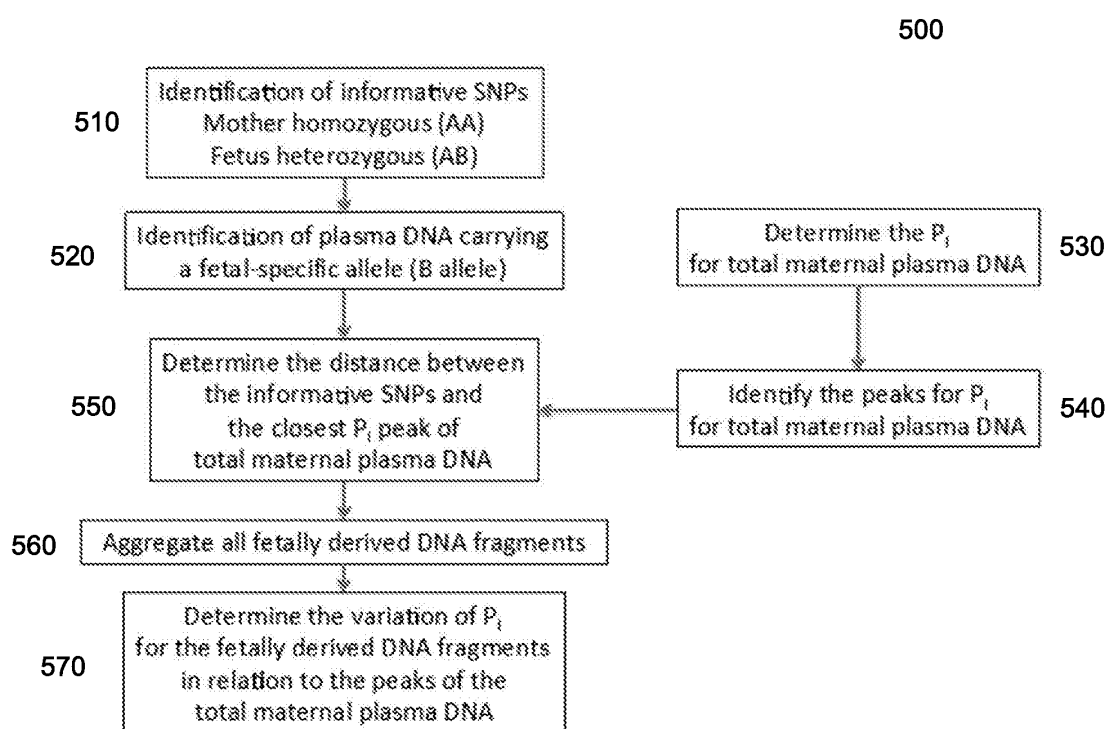


FIG. 27

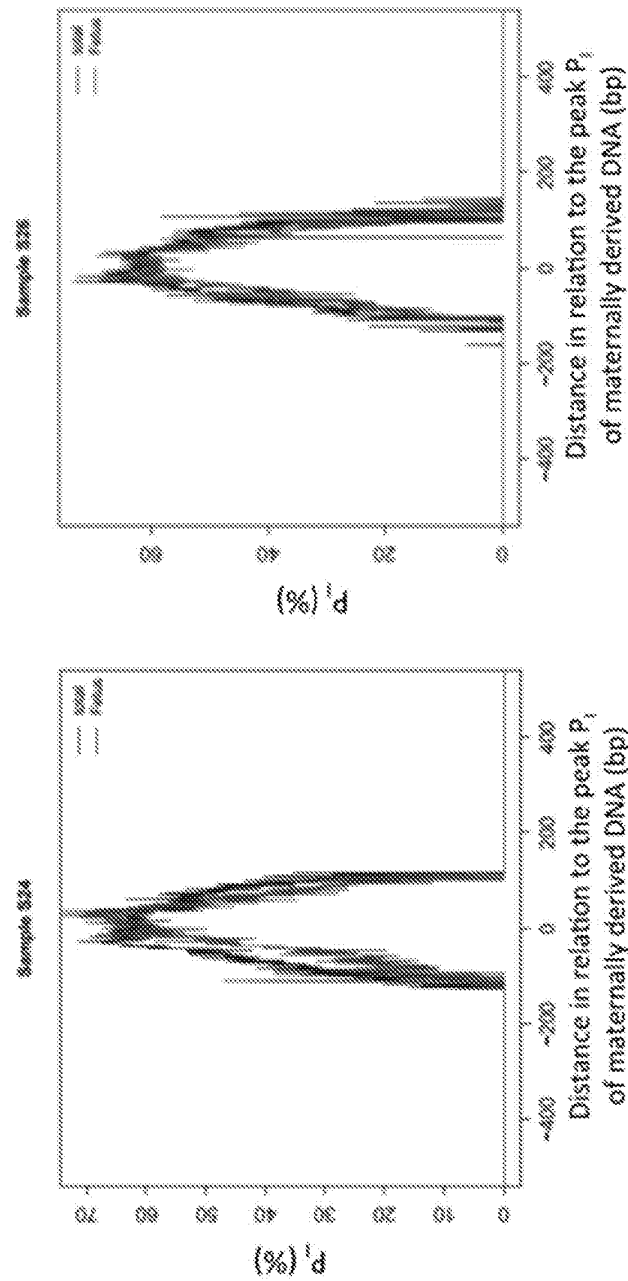


FIG. 28

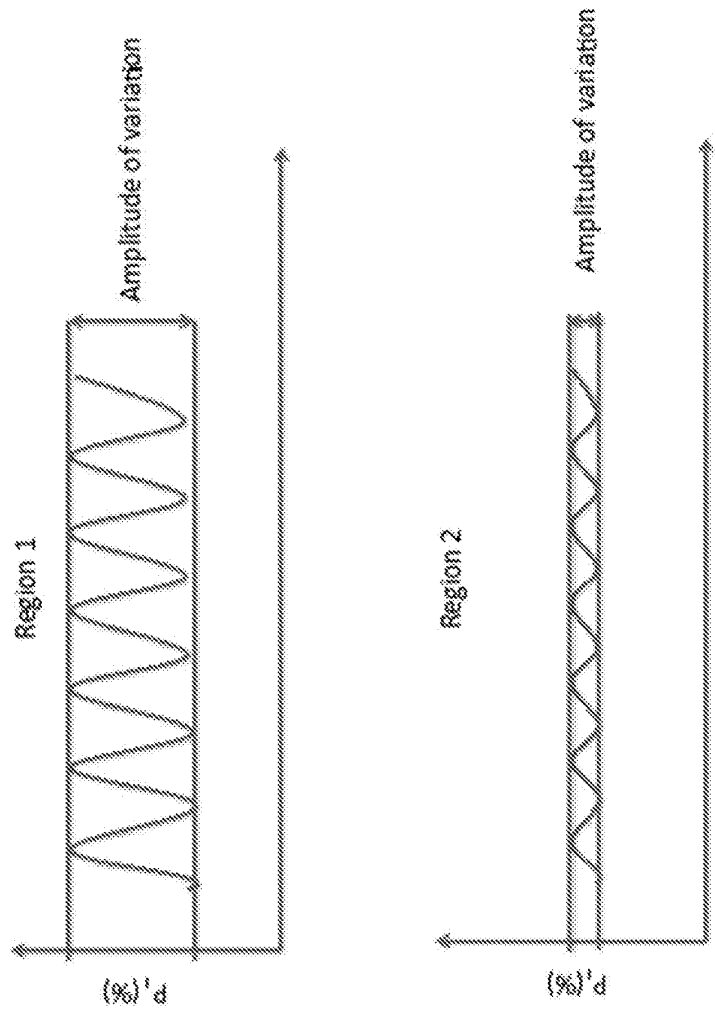


FIG. 29

Fig. 30B

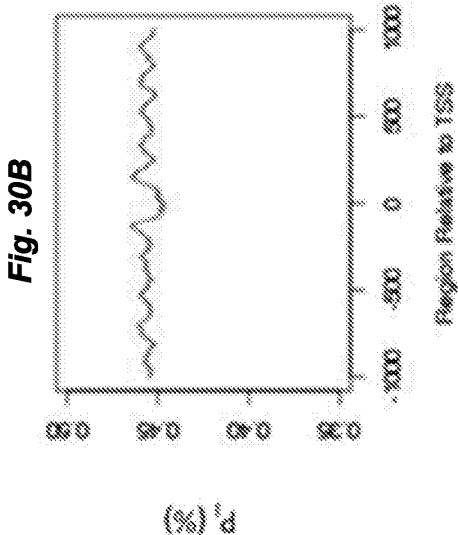
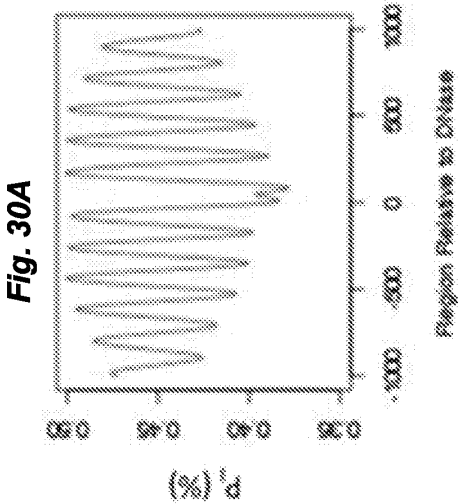


Fig. 30A



A region that is a DNase hypersensitivity
site for tissue A but not tissue B

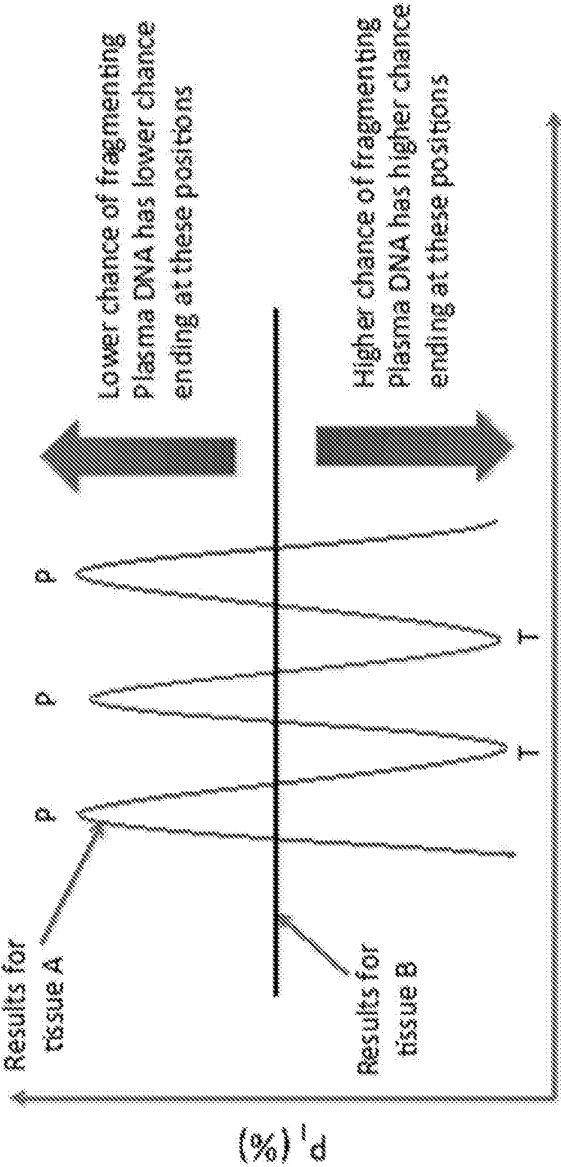
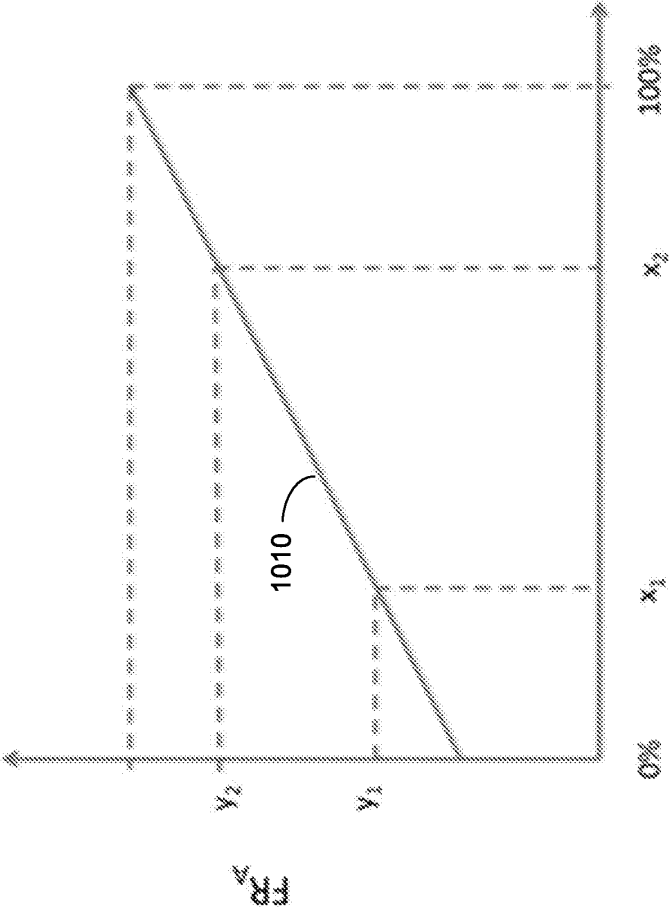


FIG. 31



Proportional contribution of tissue A in a mixture of plasma DNA derived from tissues A and B

FIG. 32

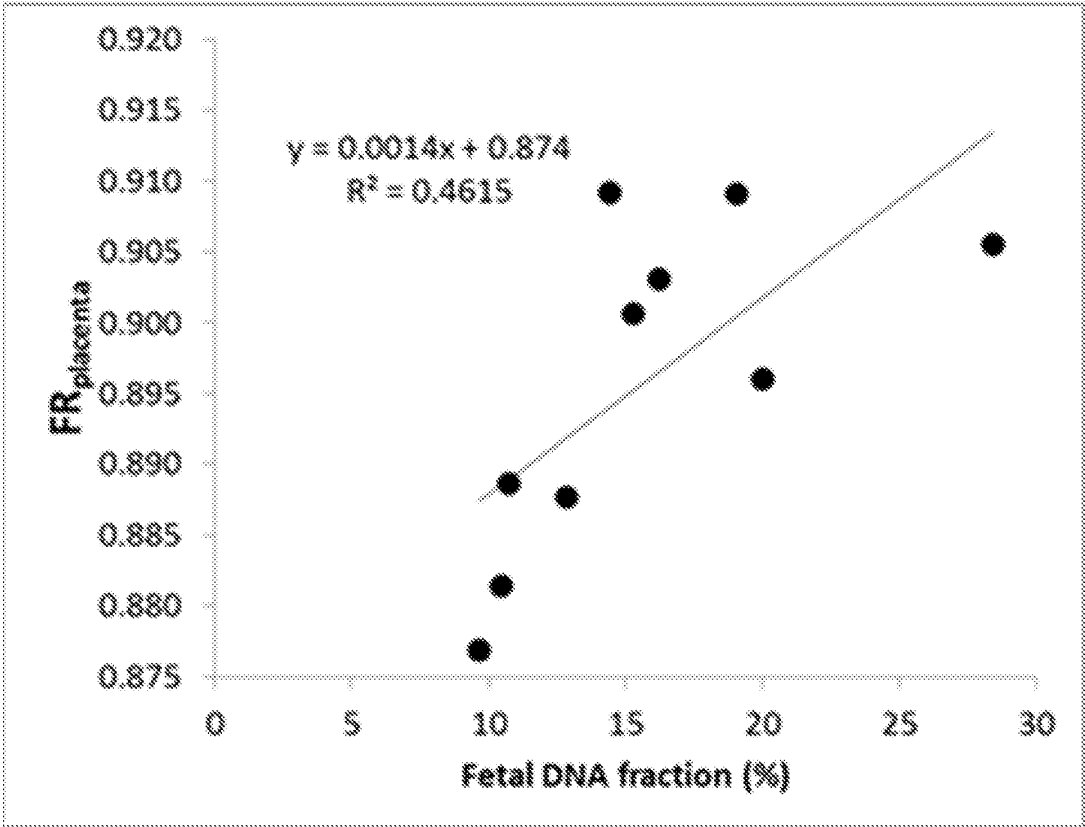
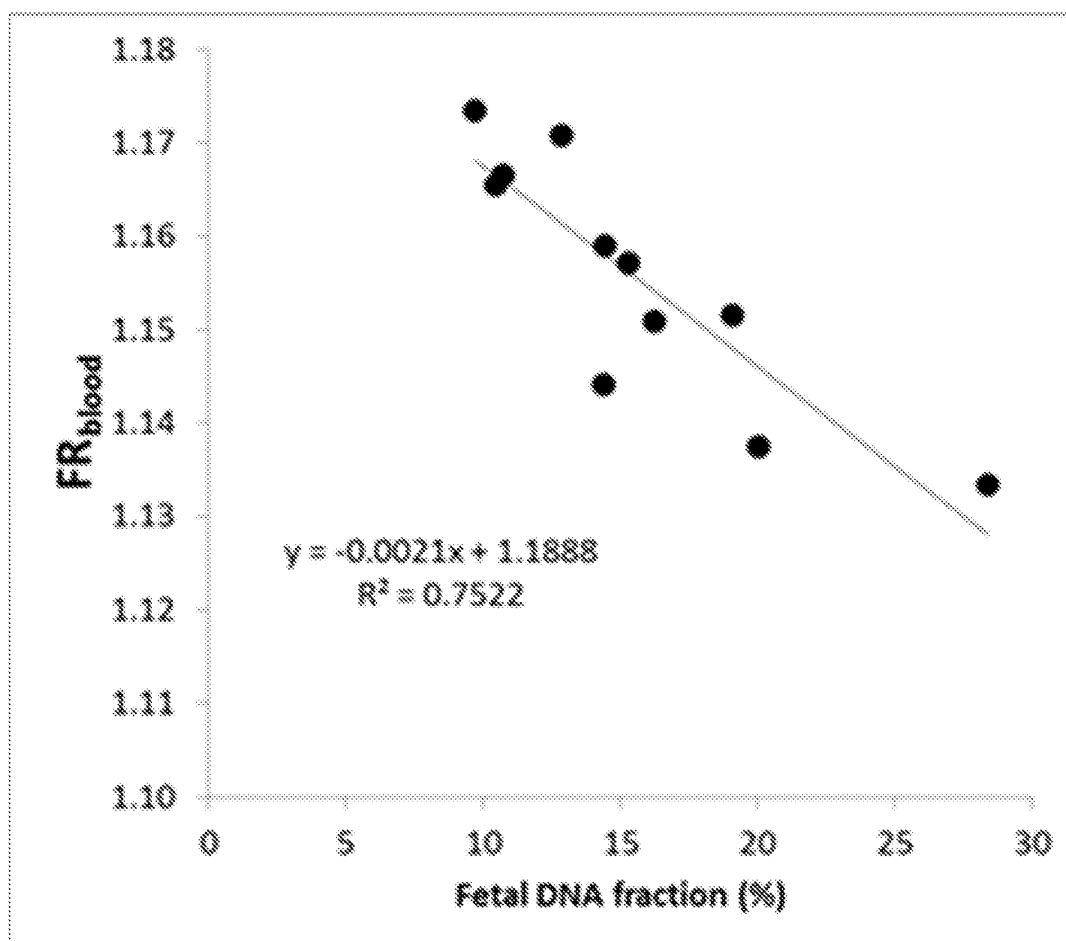
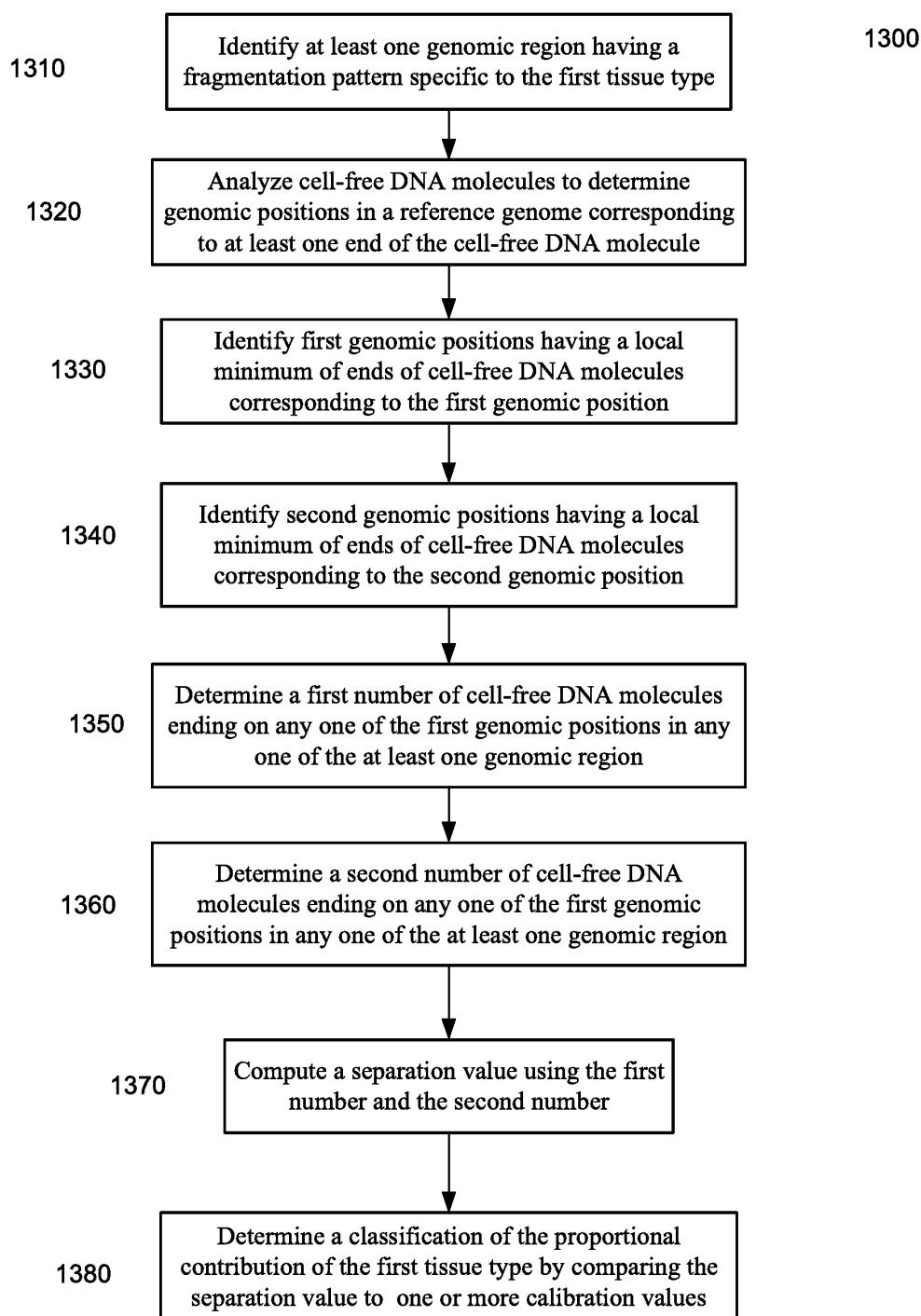


FIG. 33

**FIG. 34**

**FIG. 35**

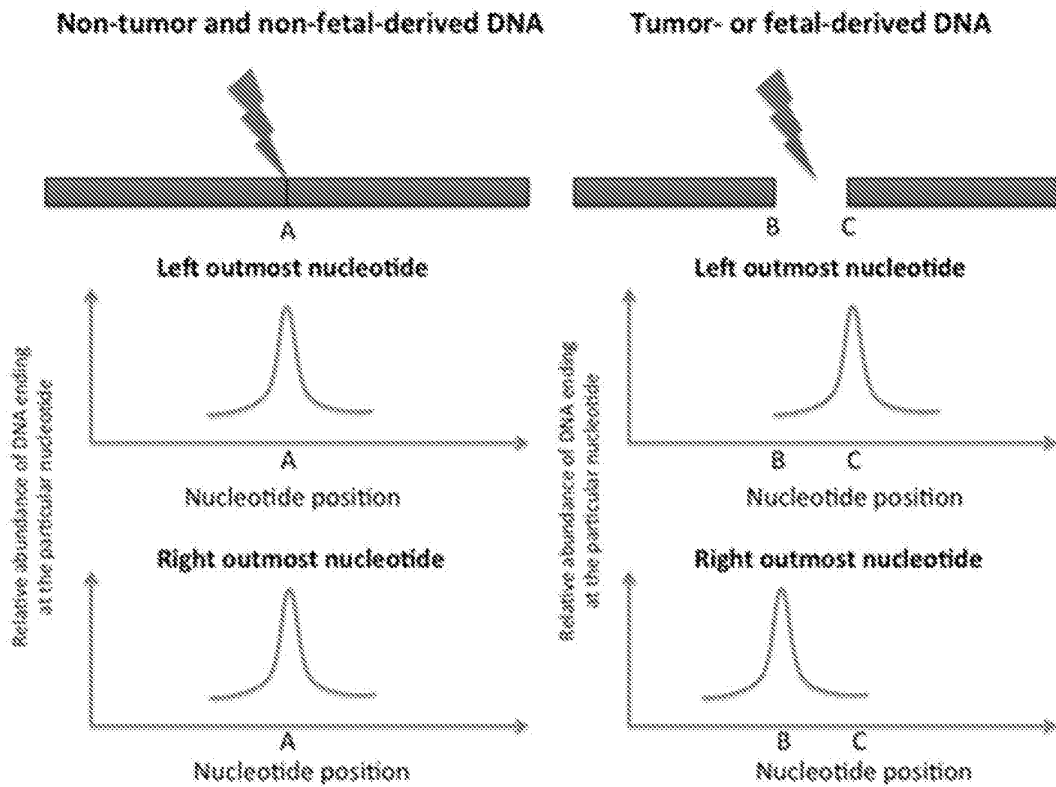
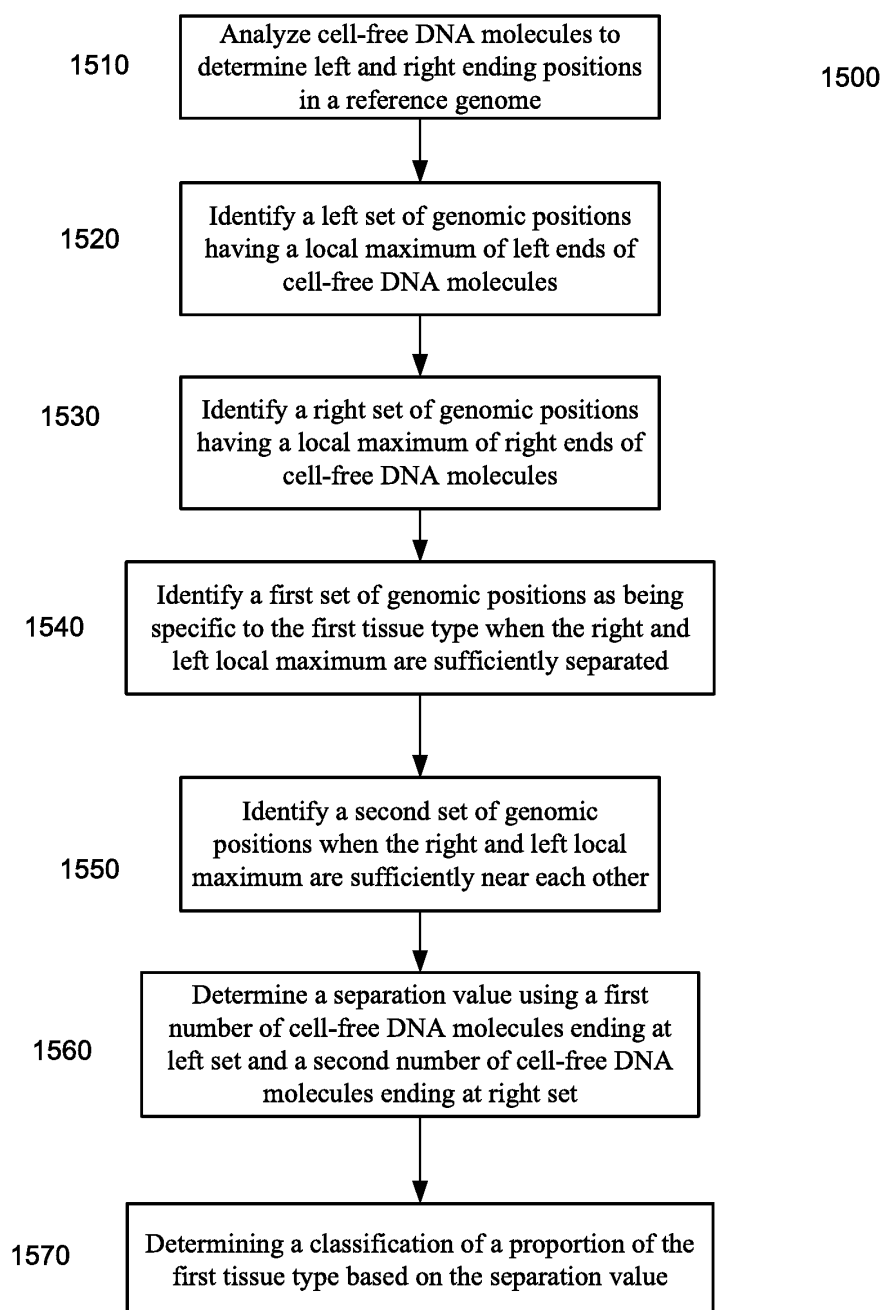


FIG. 36

**FIG. 37**

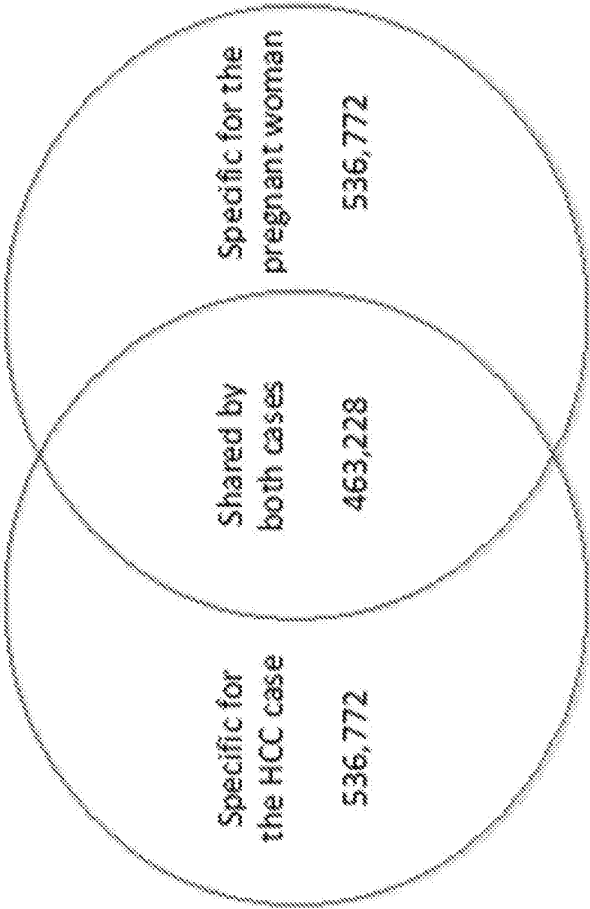


FIG. 38

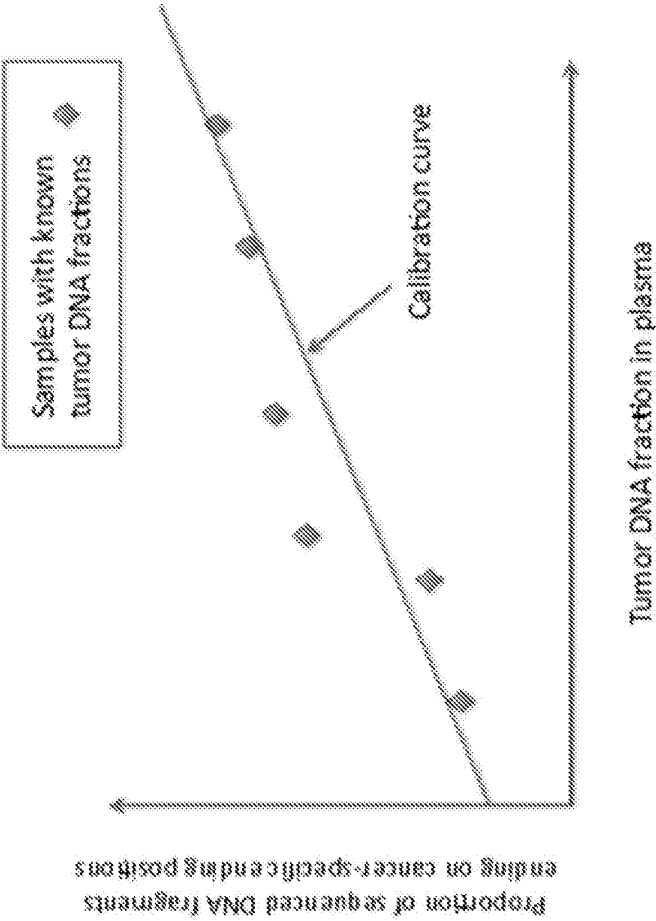


FIG. 39

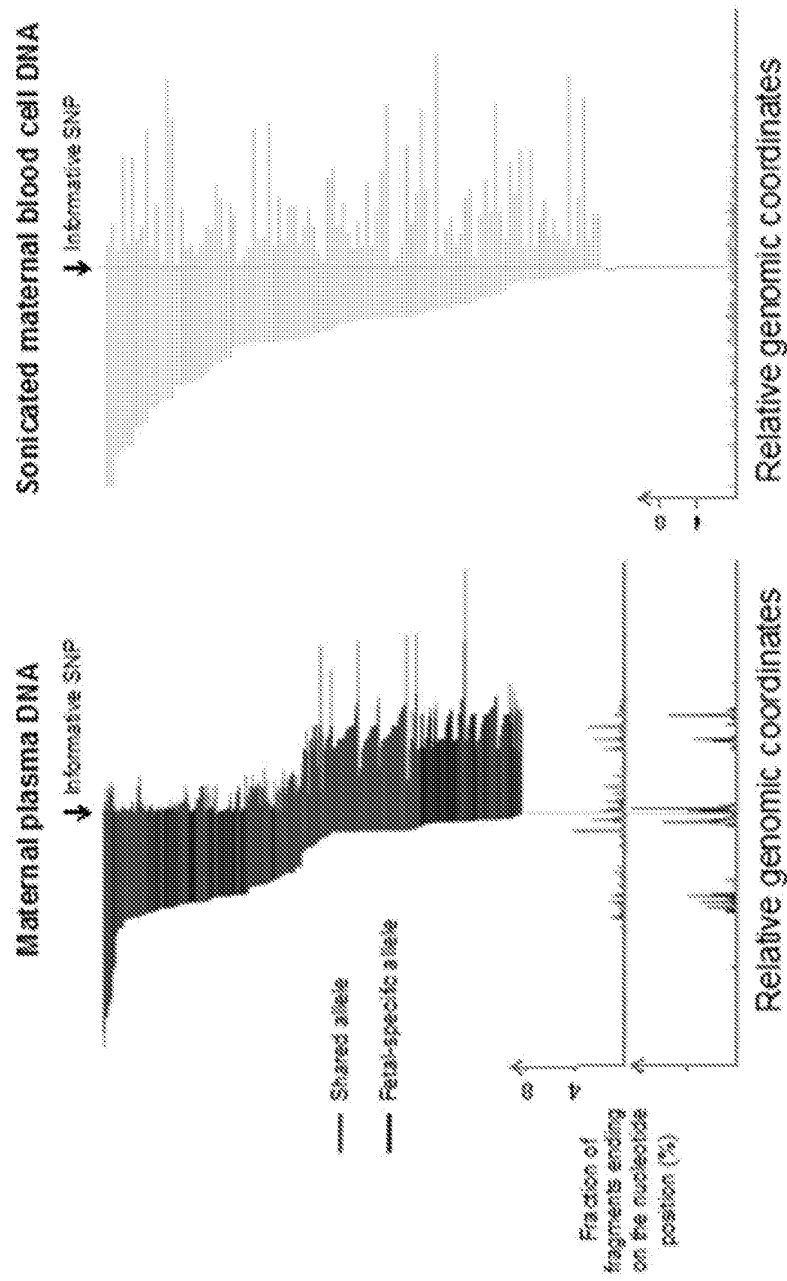


FIG. 40

Informative SNP that mother was homozygous
and fetus was heterozygous

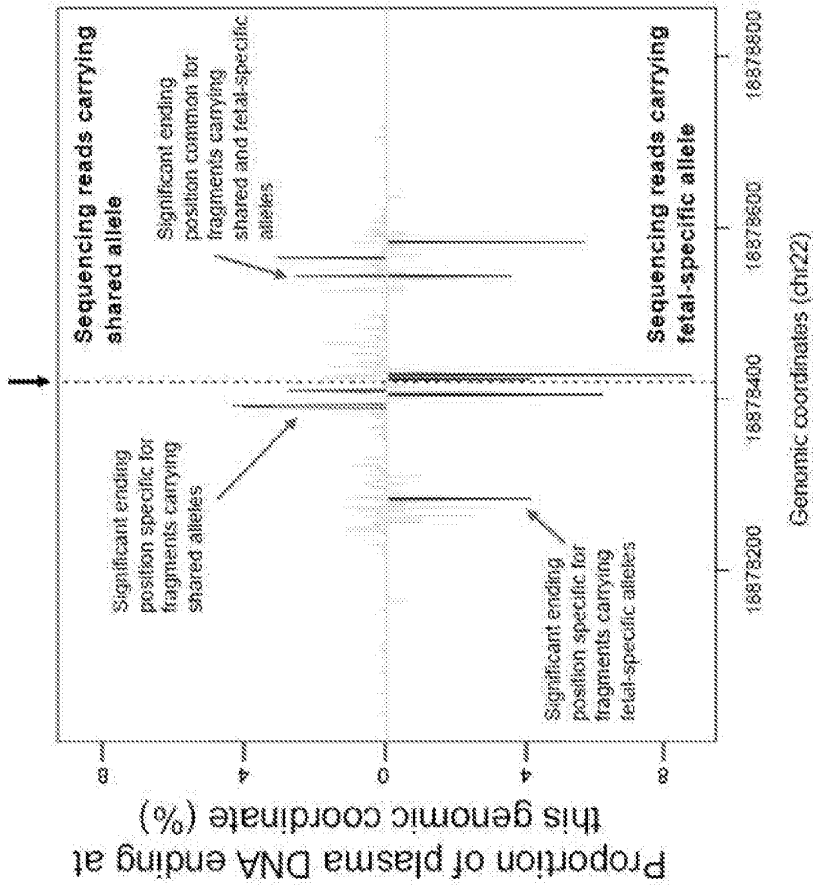


FIG. 41

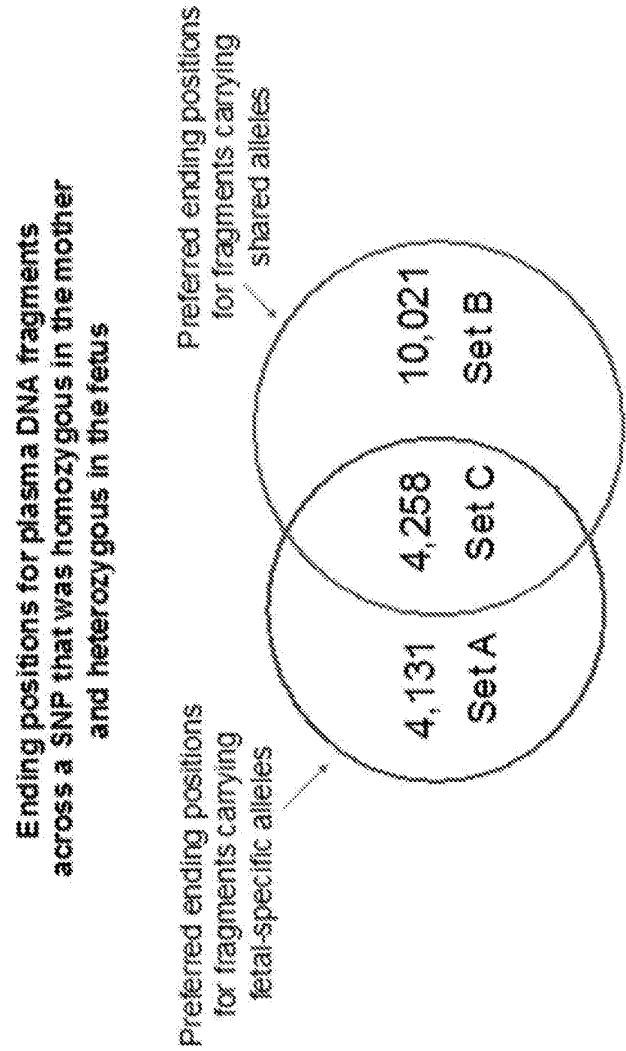


FIG. 42

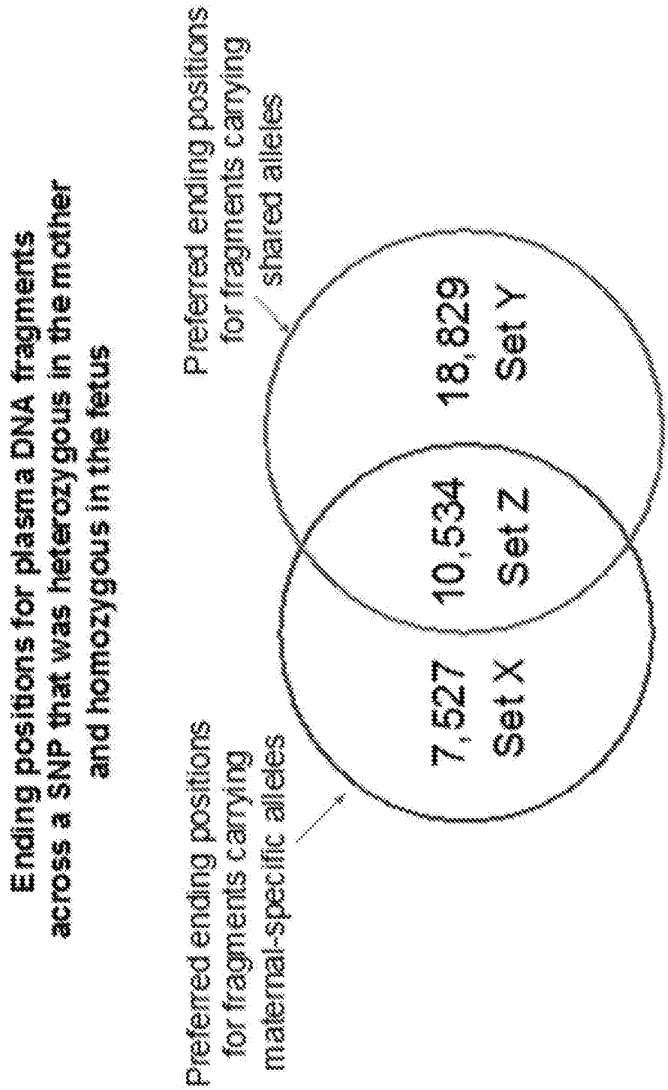


FIG. 43

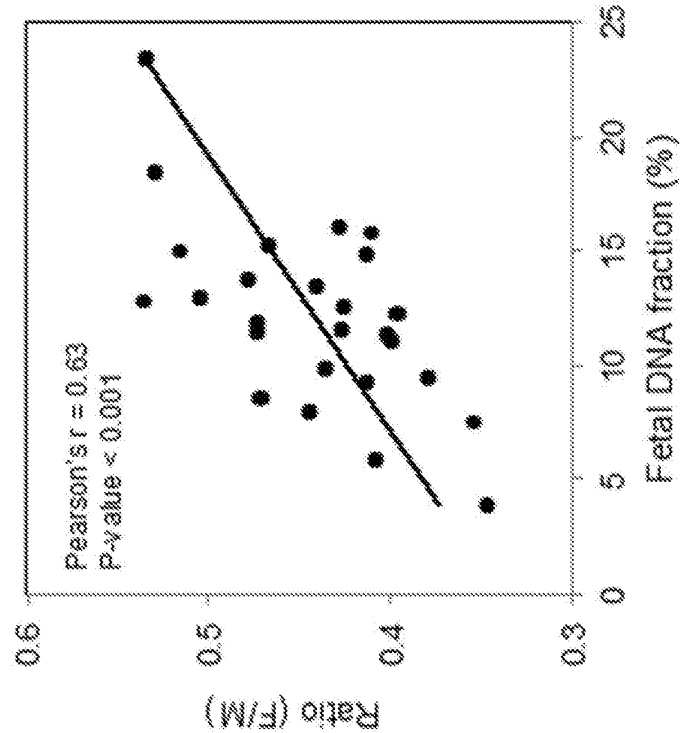
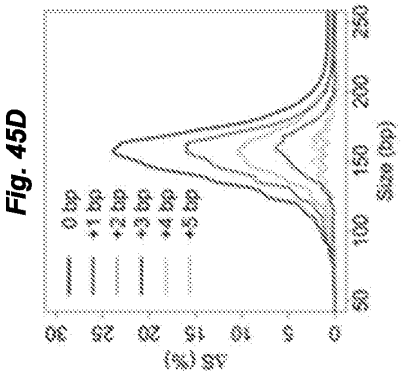
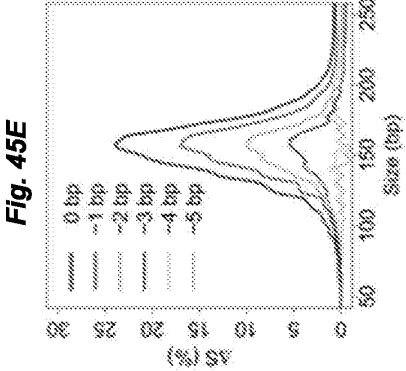
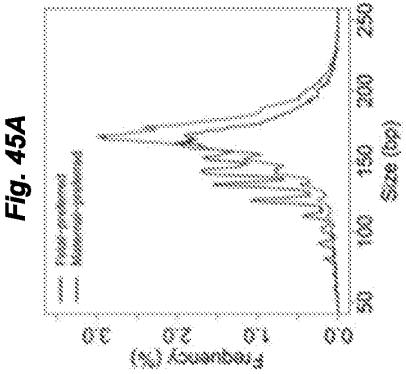
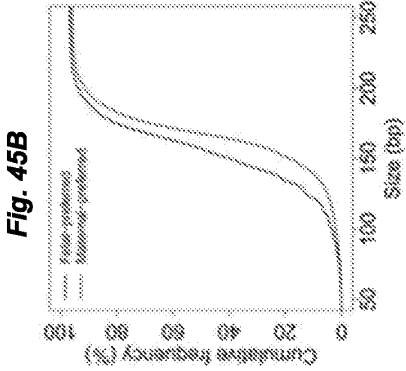
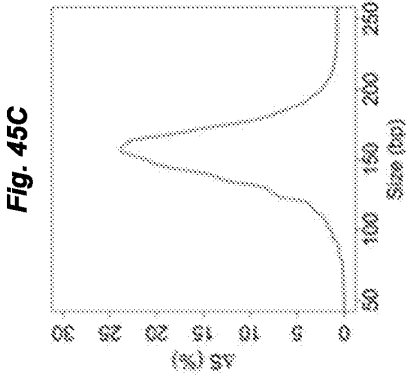
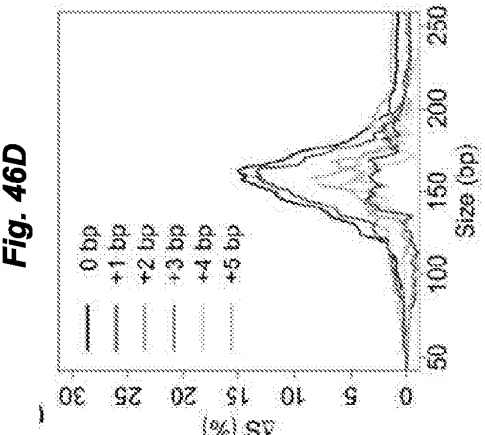
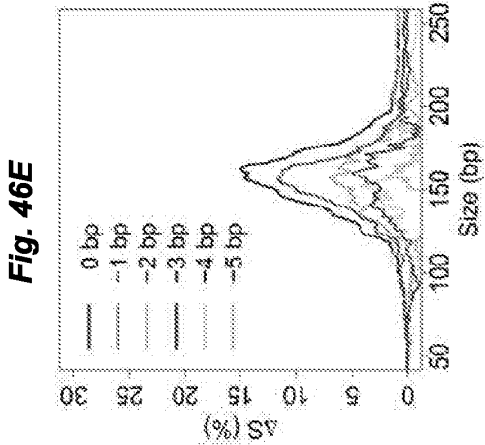
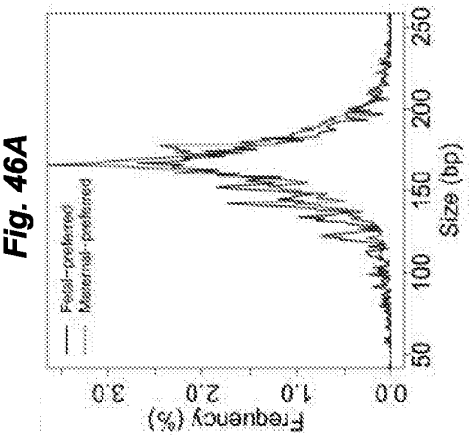
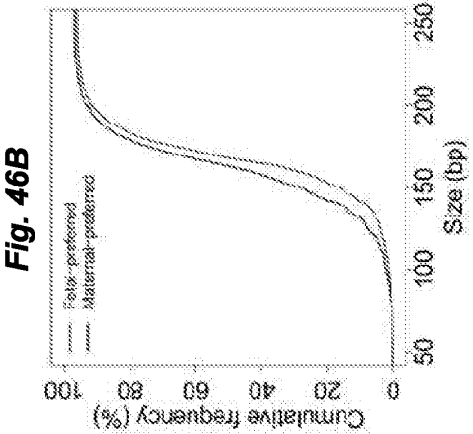
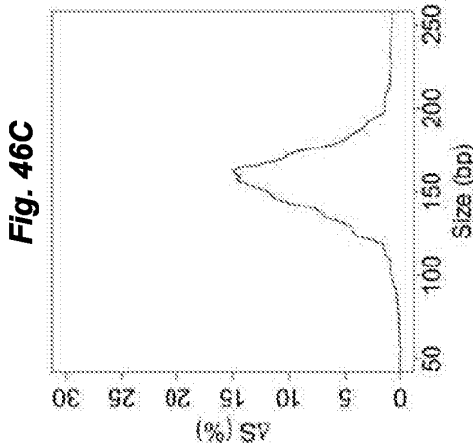


FIG. 44





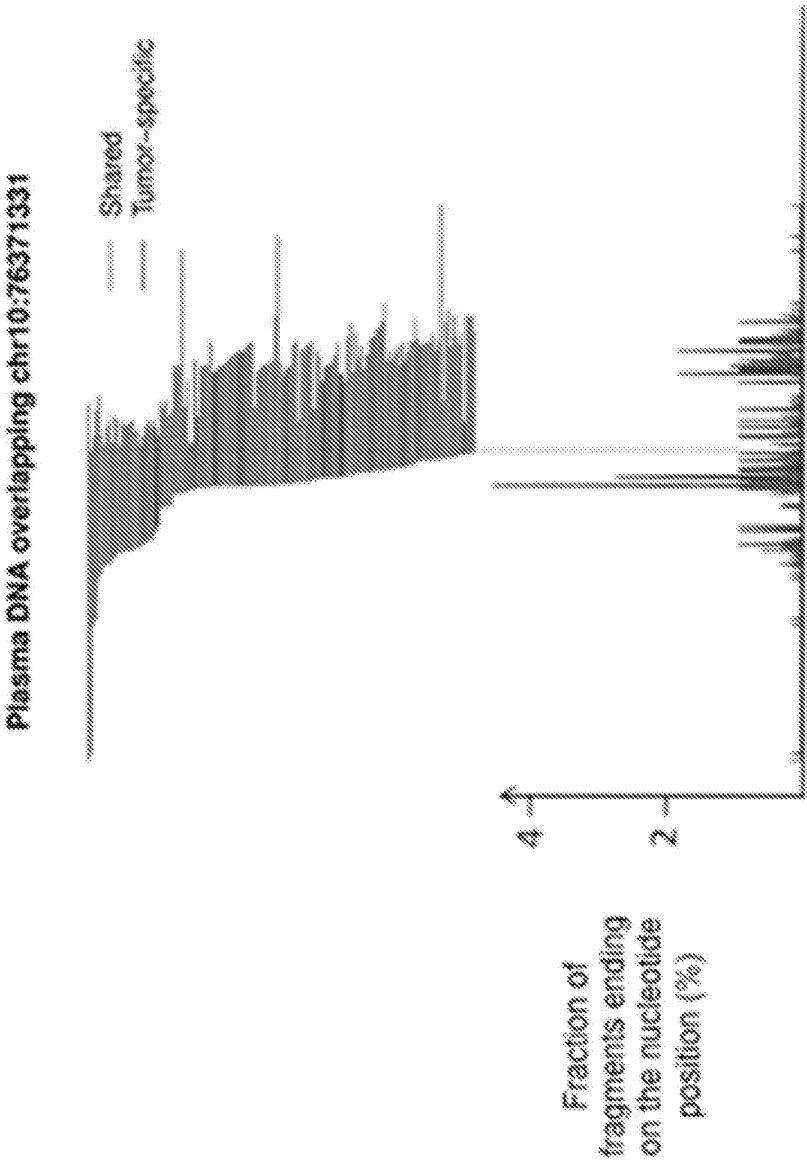


FIG. 47

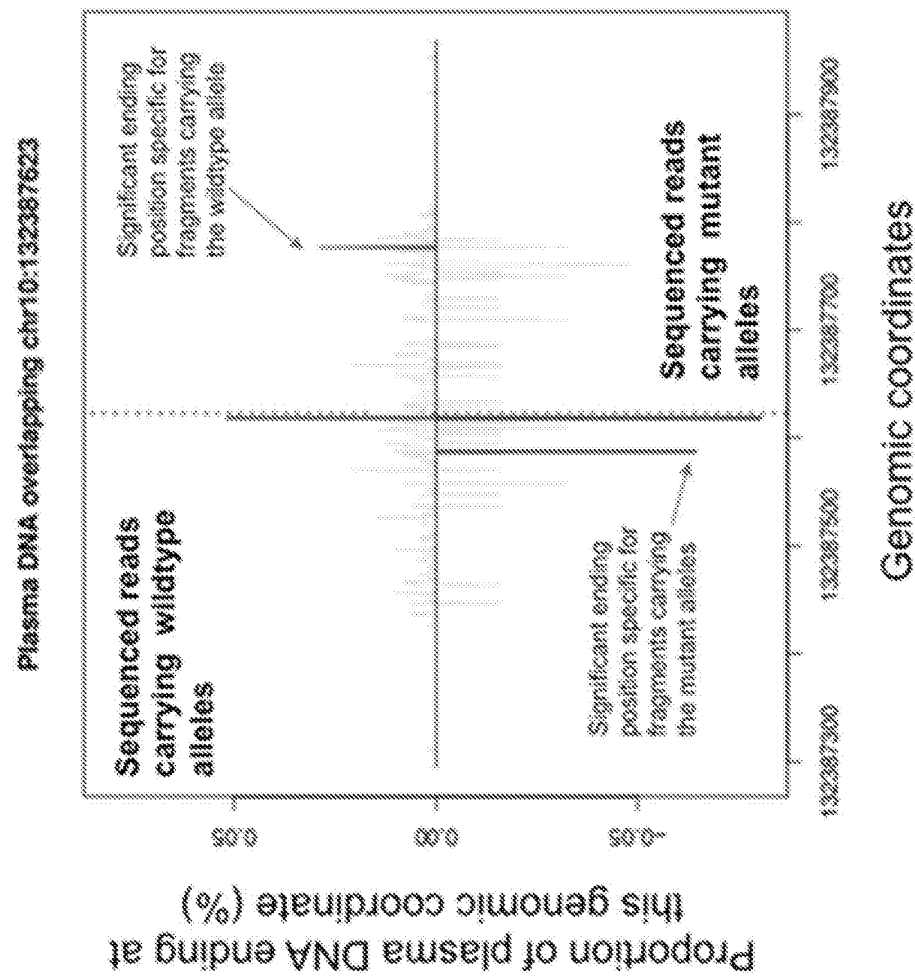
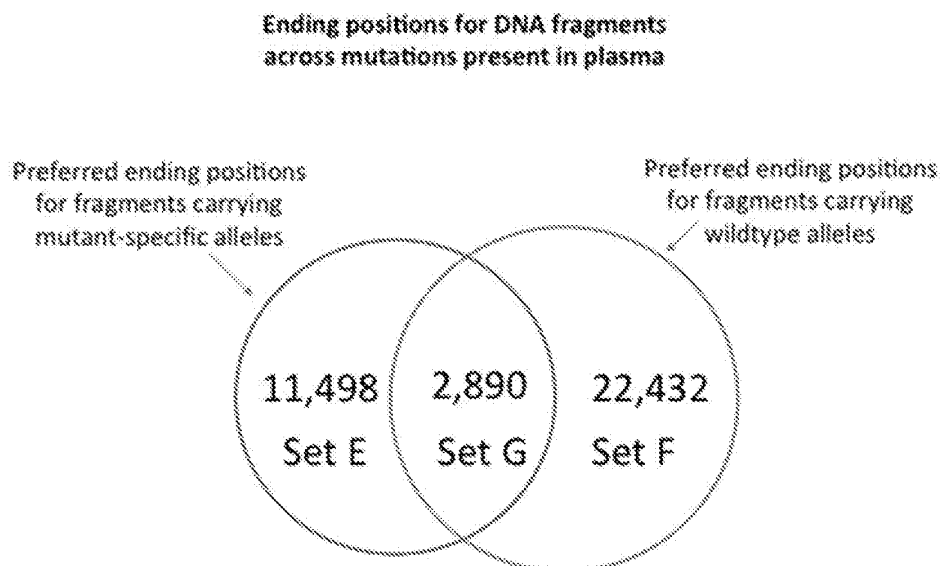
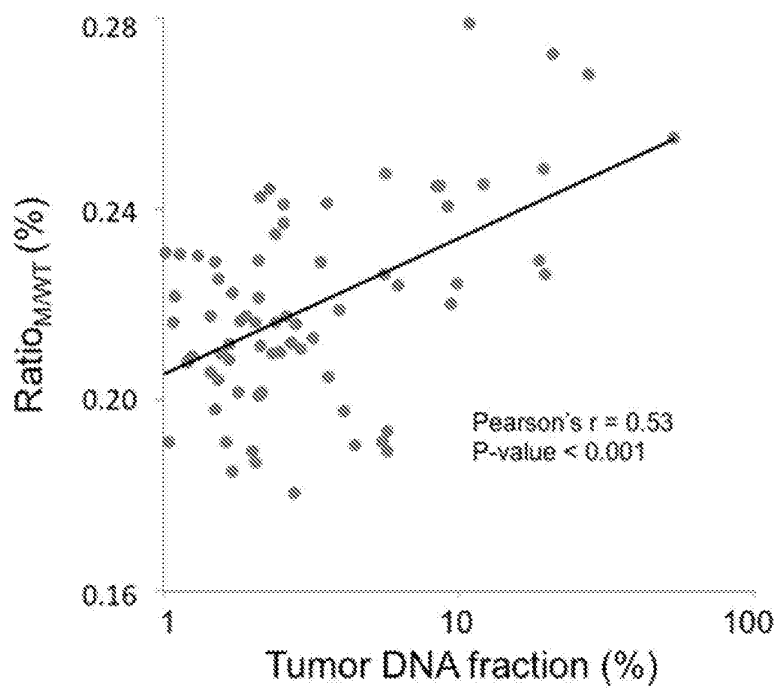


FIG. 48

**FIG. 49A****FIG. 49B**

Preferred ending sites
for plasma DNA fragments

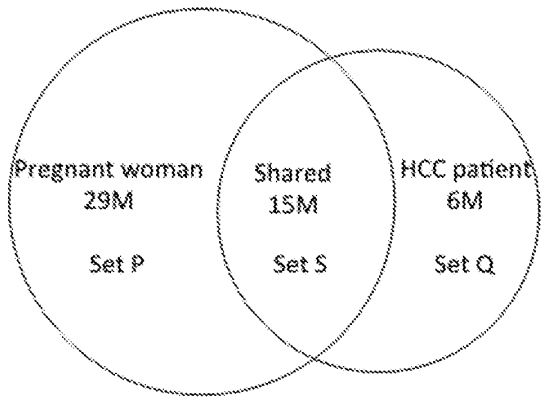


FIG. 50A

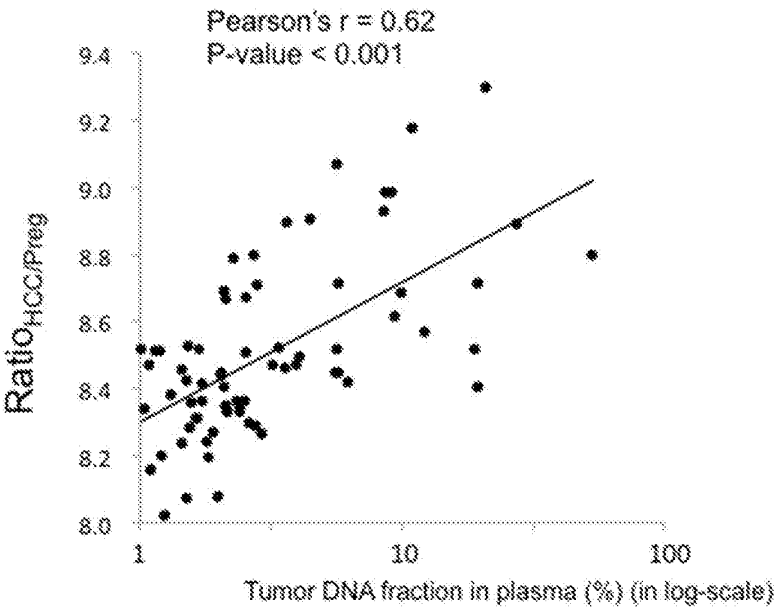


FIG. 50B

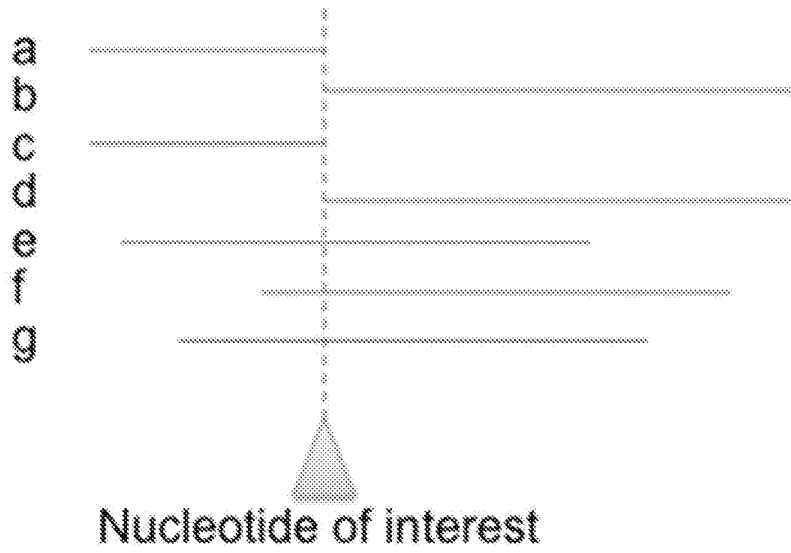


FIG. 51A

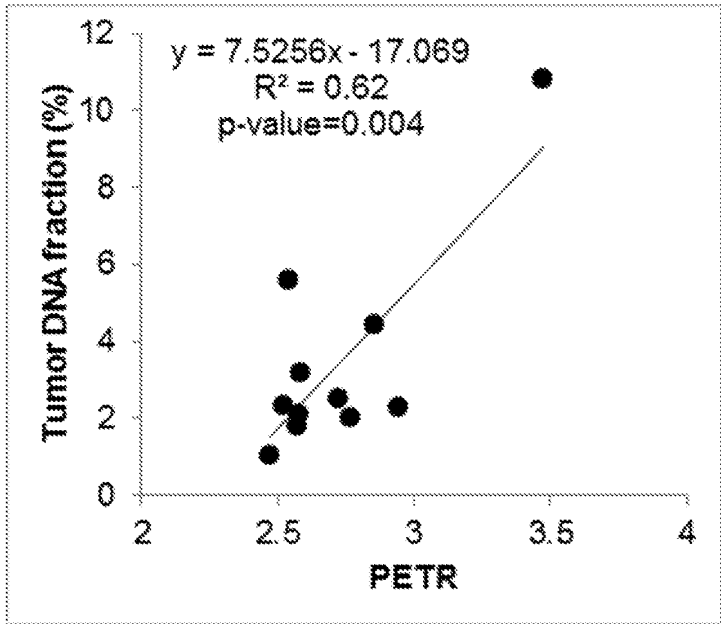


FIG. 51B

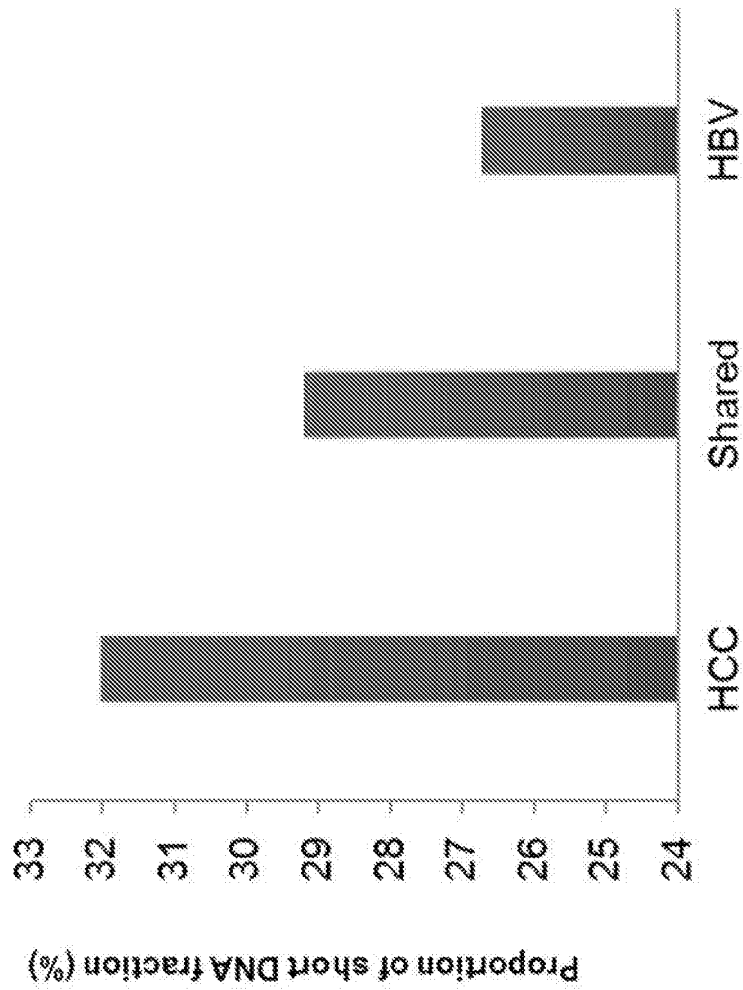


FIG. 52

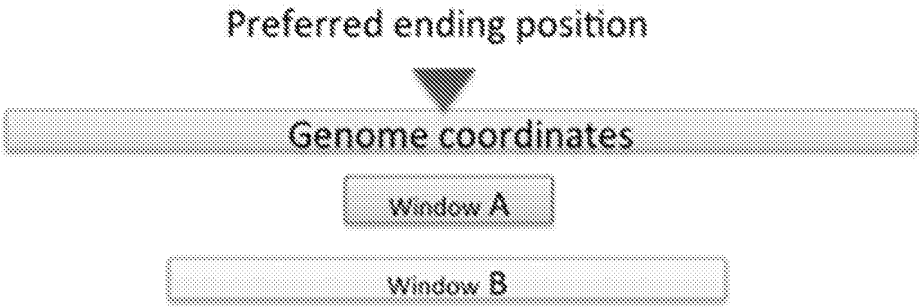


FIG. 53A

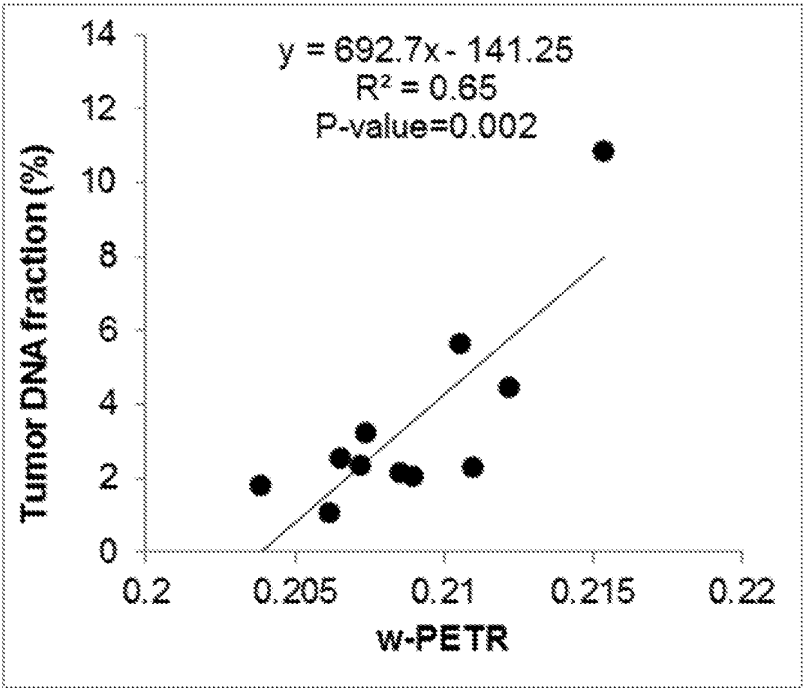


FIG. 53B

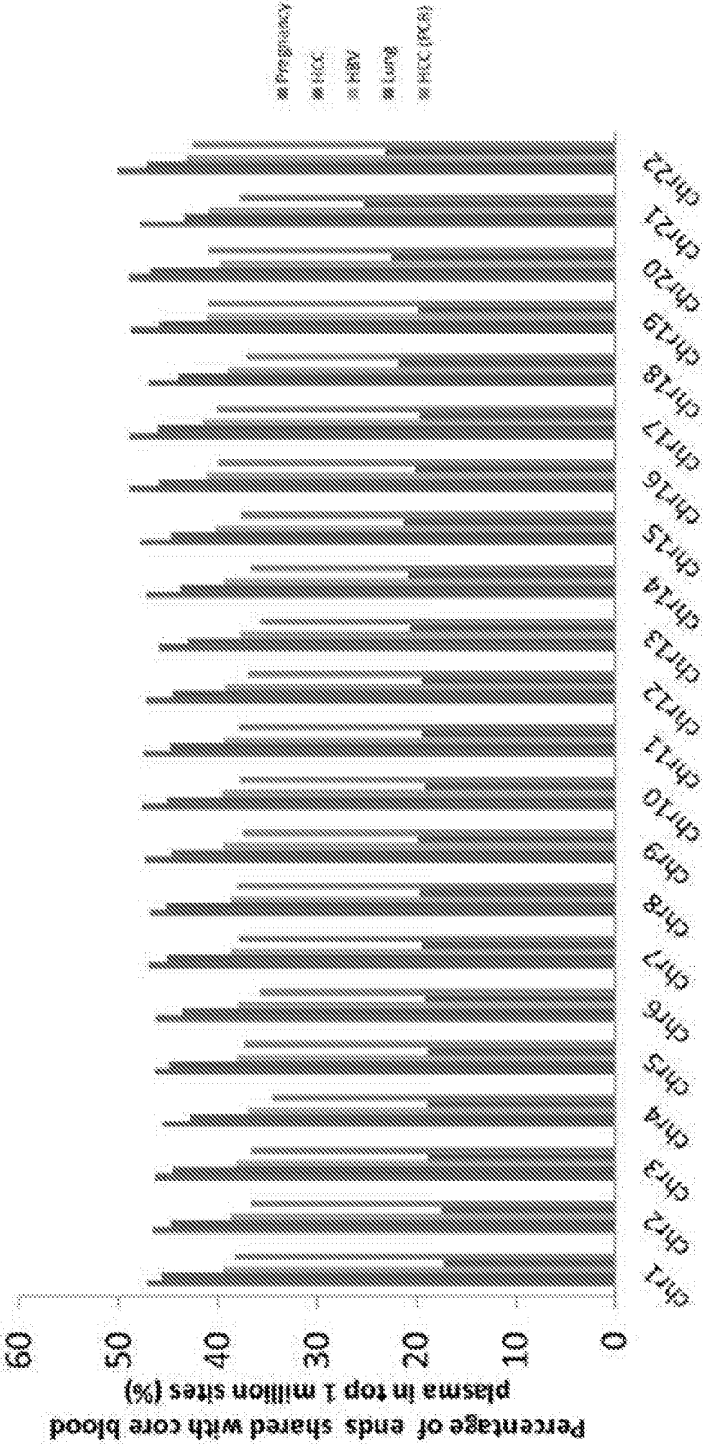


FIG. 54

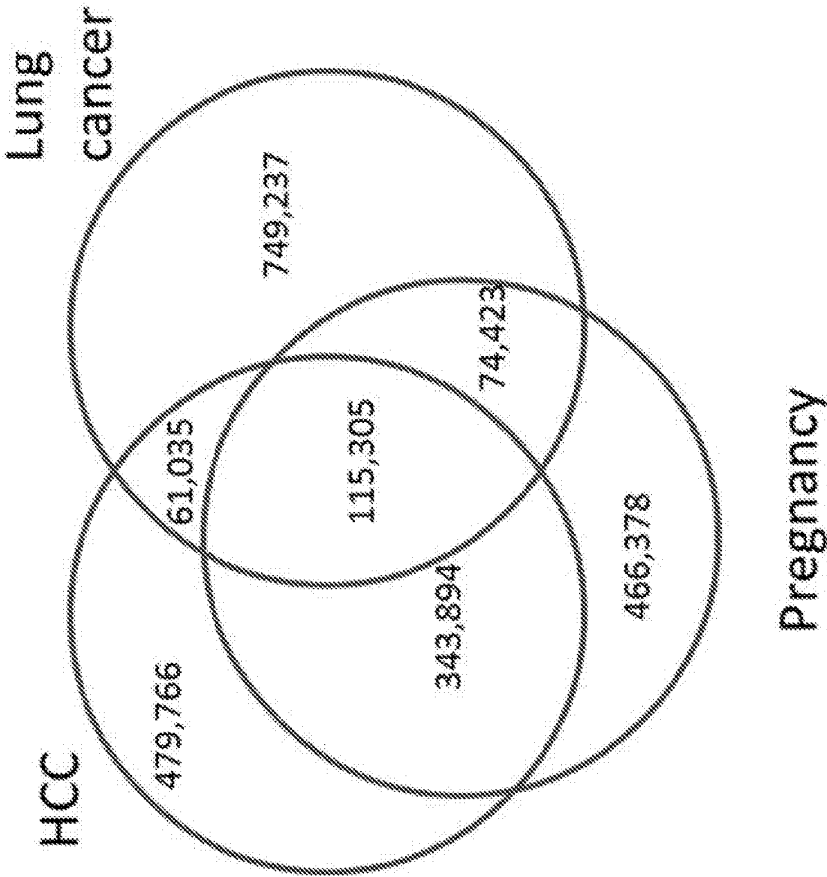


FIG. 55

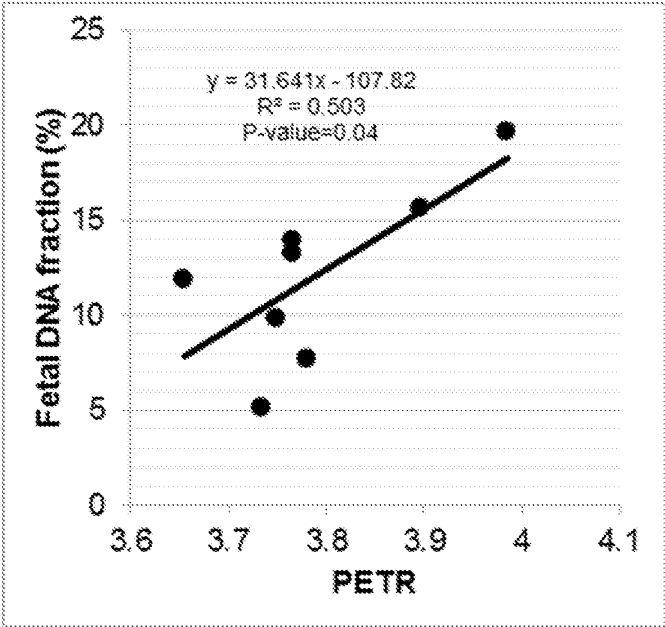


FIG. 56A

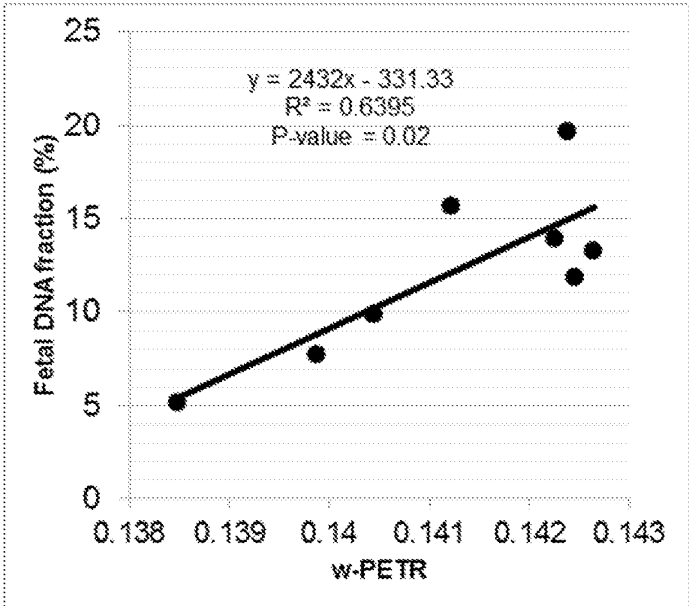


FIG. 56B

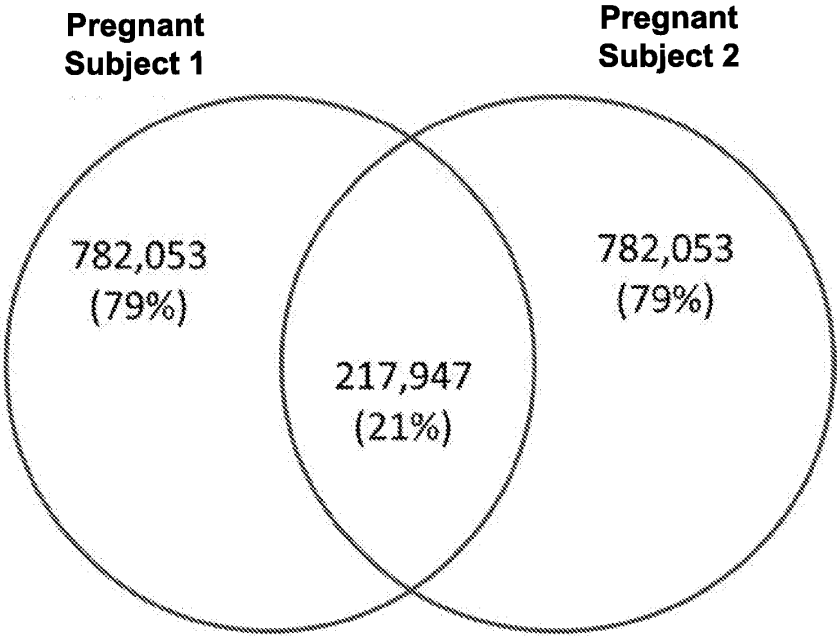


FIG. 57A

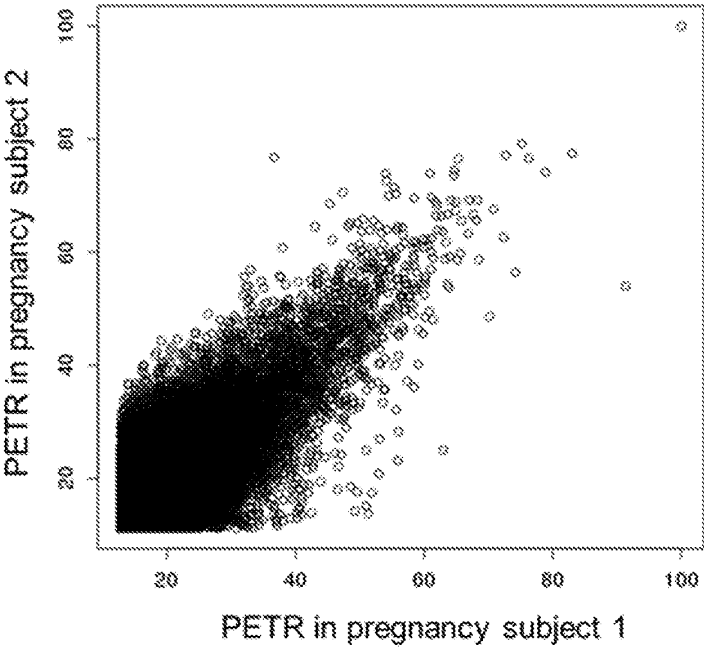


FIG. 57B

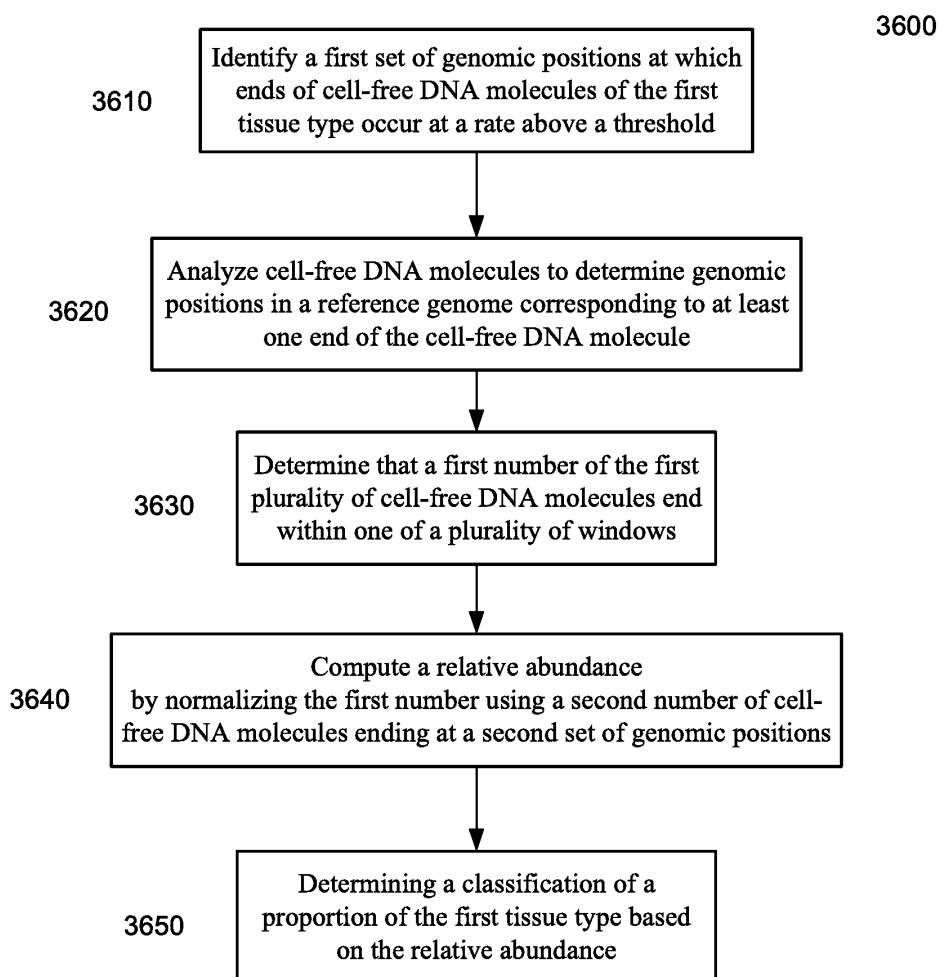
**FIG. 58**

Fig. 59A

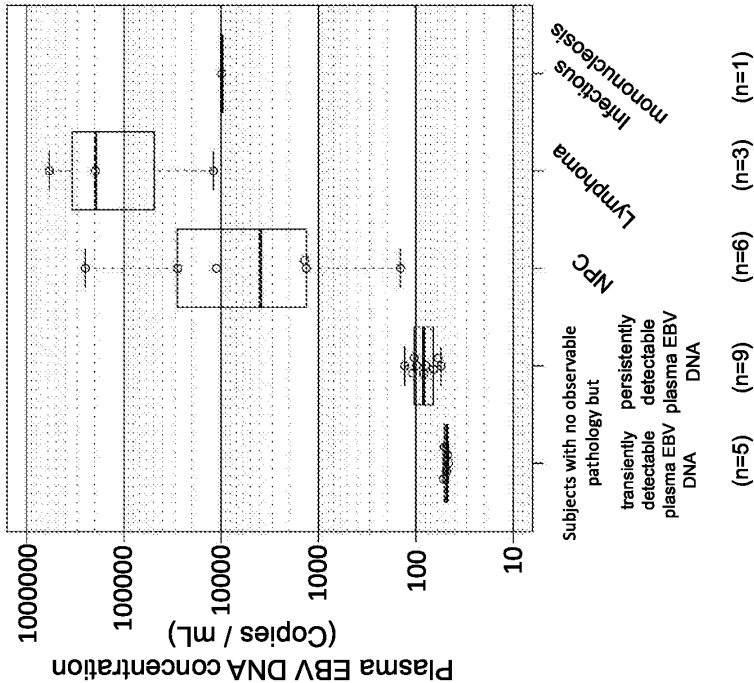
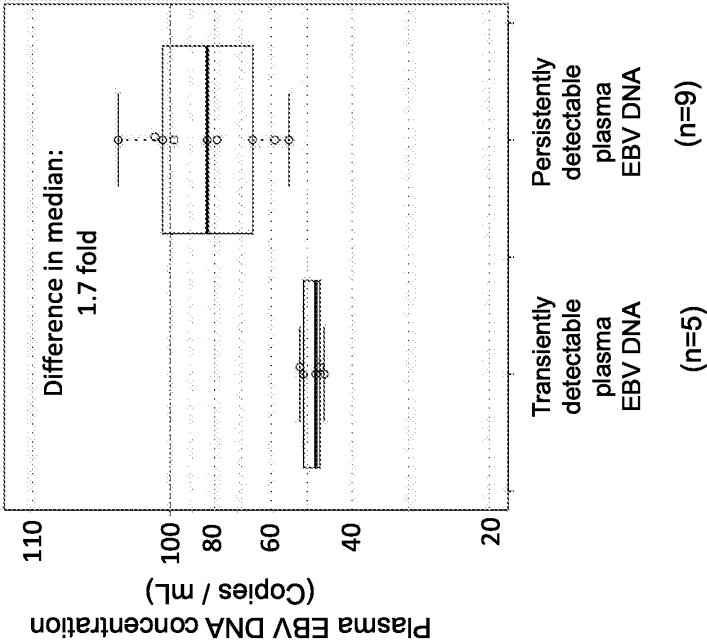
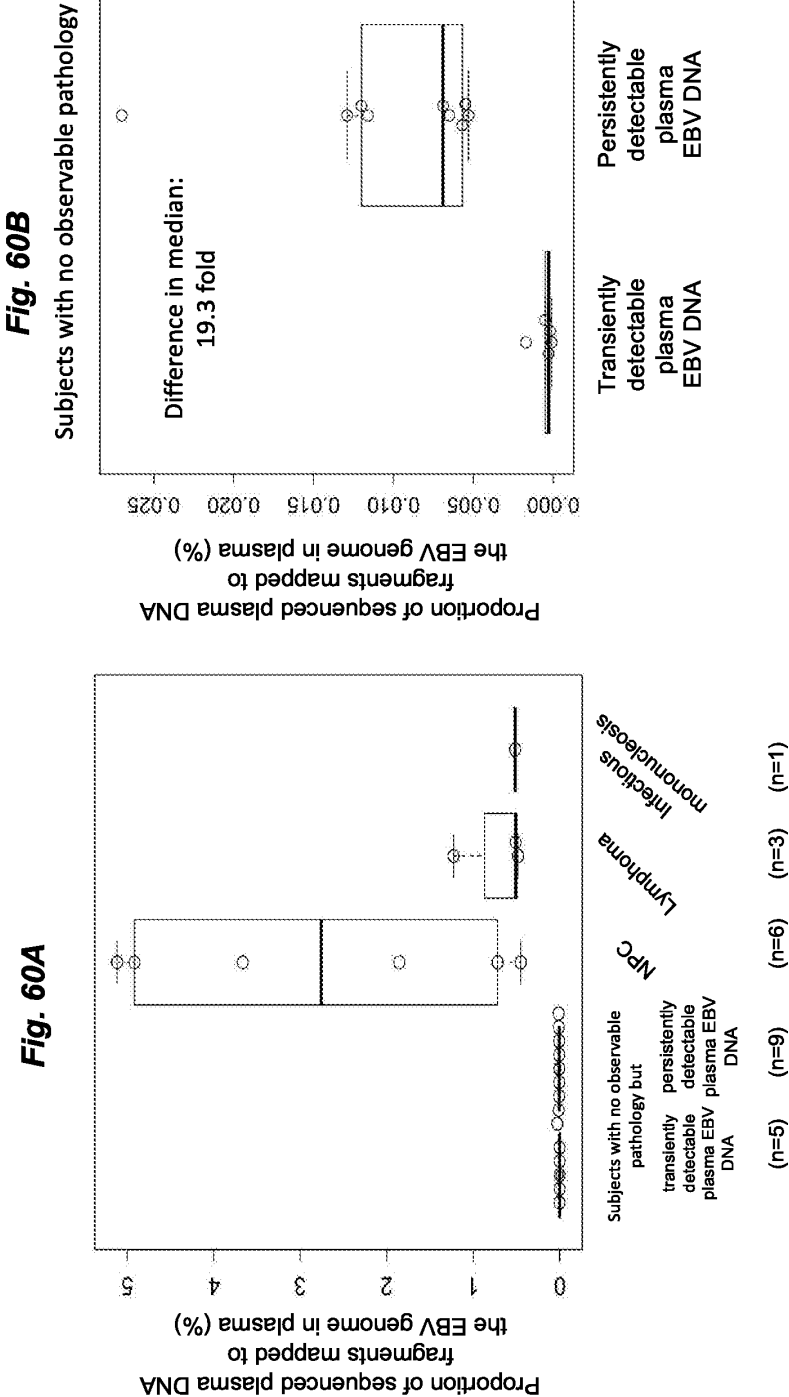


Fig. 59B

Subjects with no observable pathology





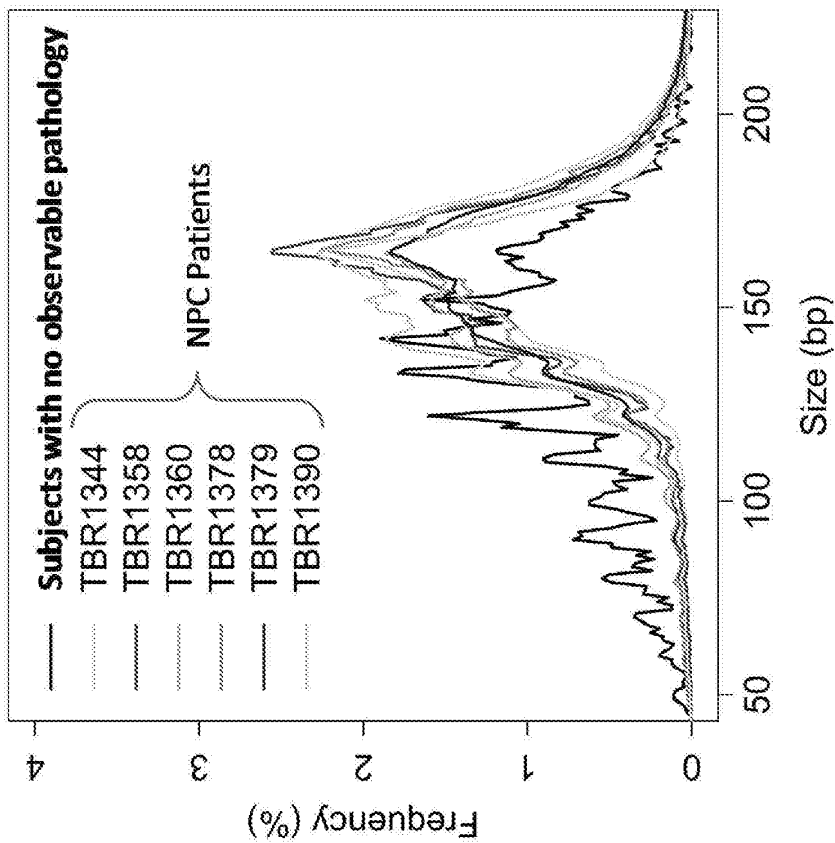


FIG. 61

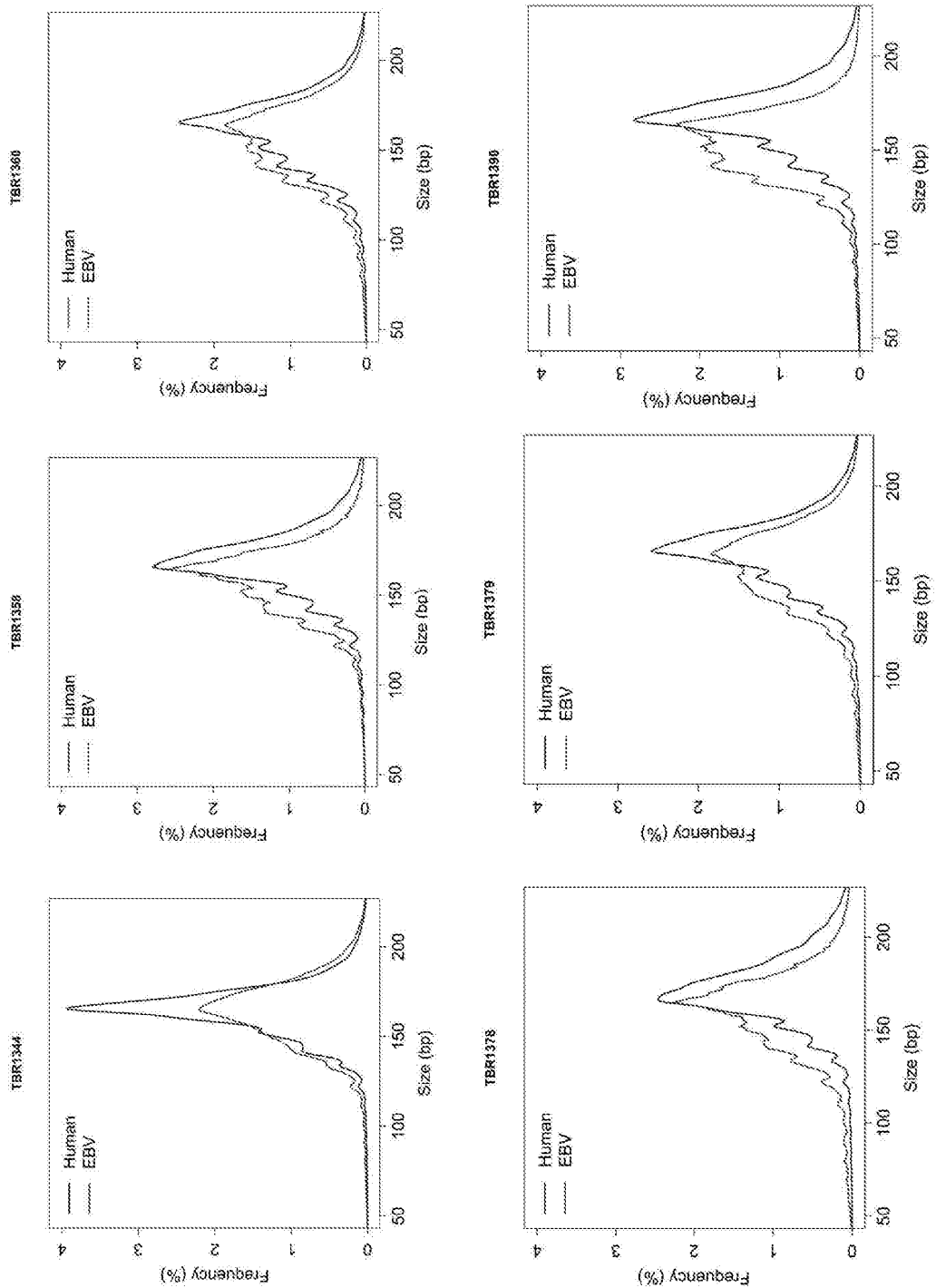


FIG. 62

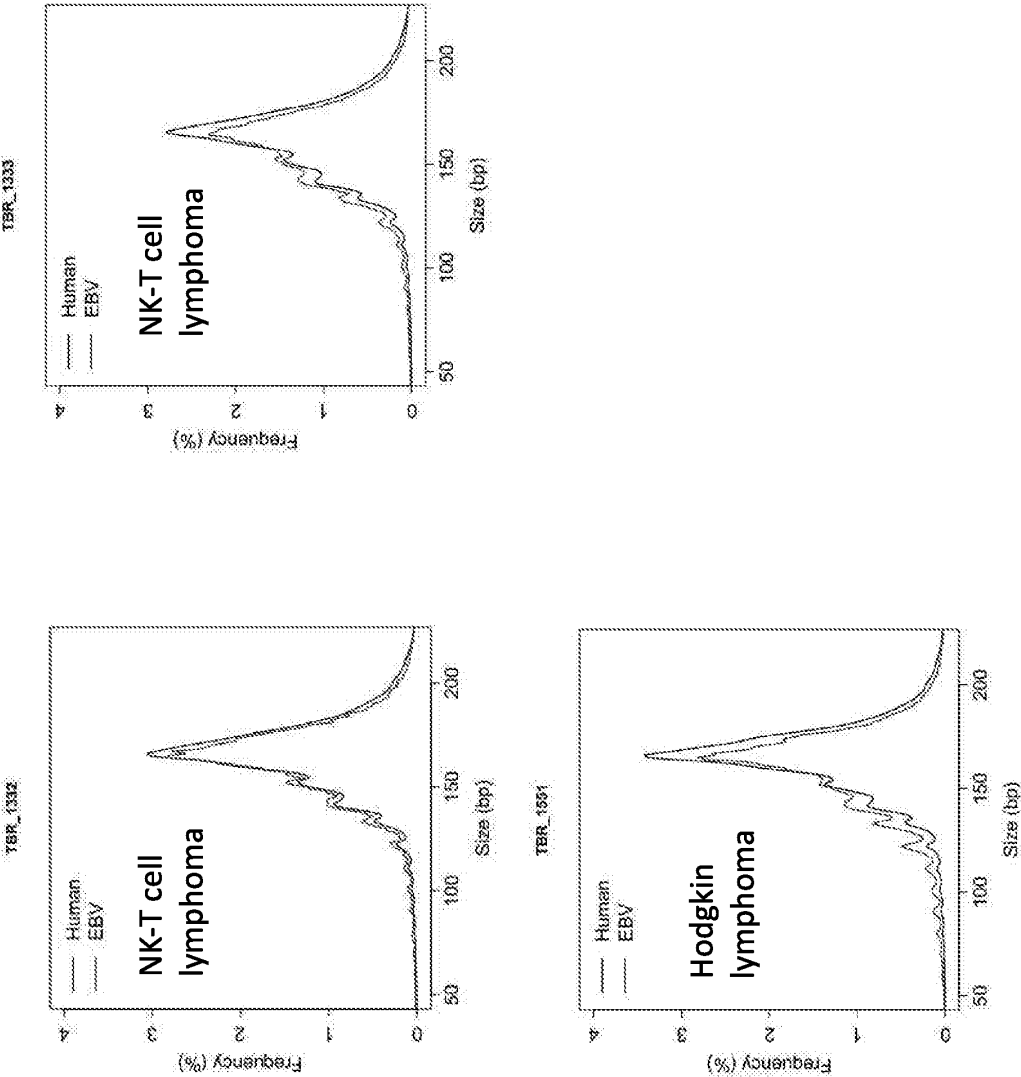


FIG. 63

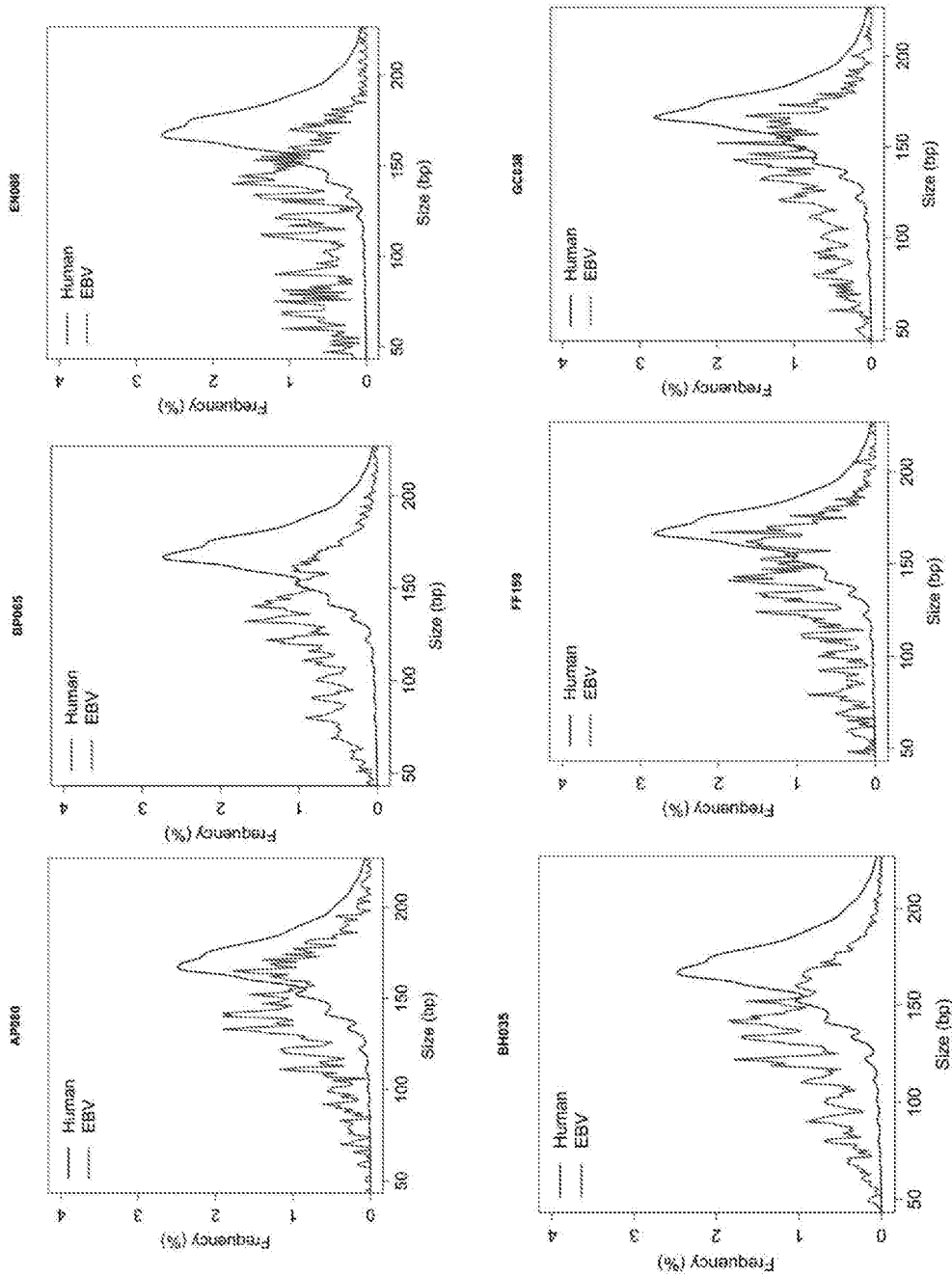


FIG. 64

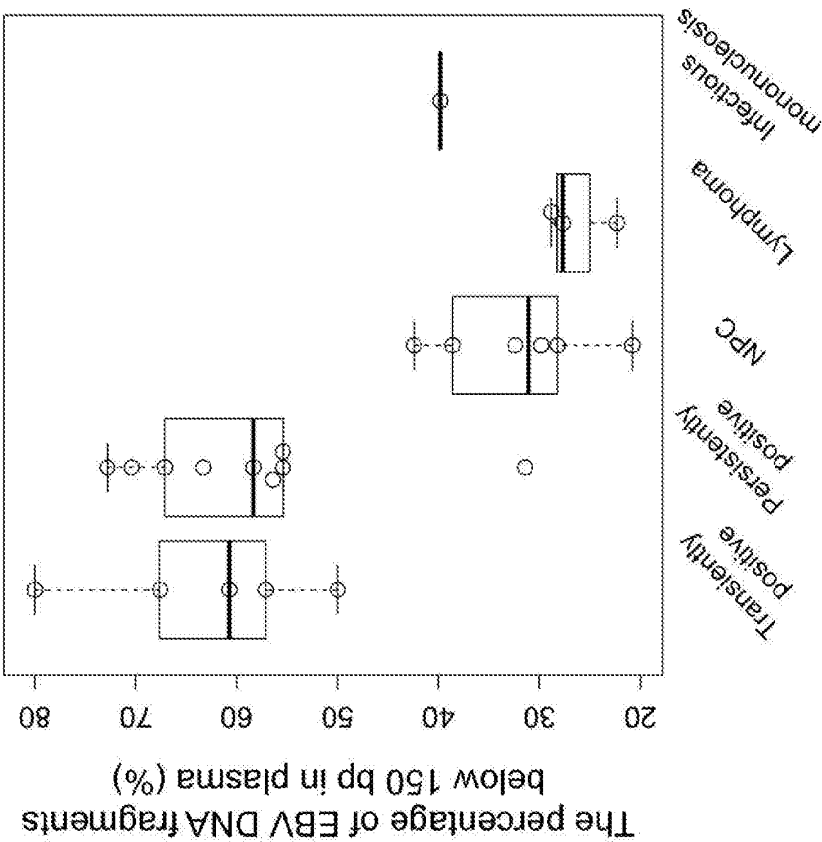


FIG. 65

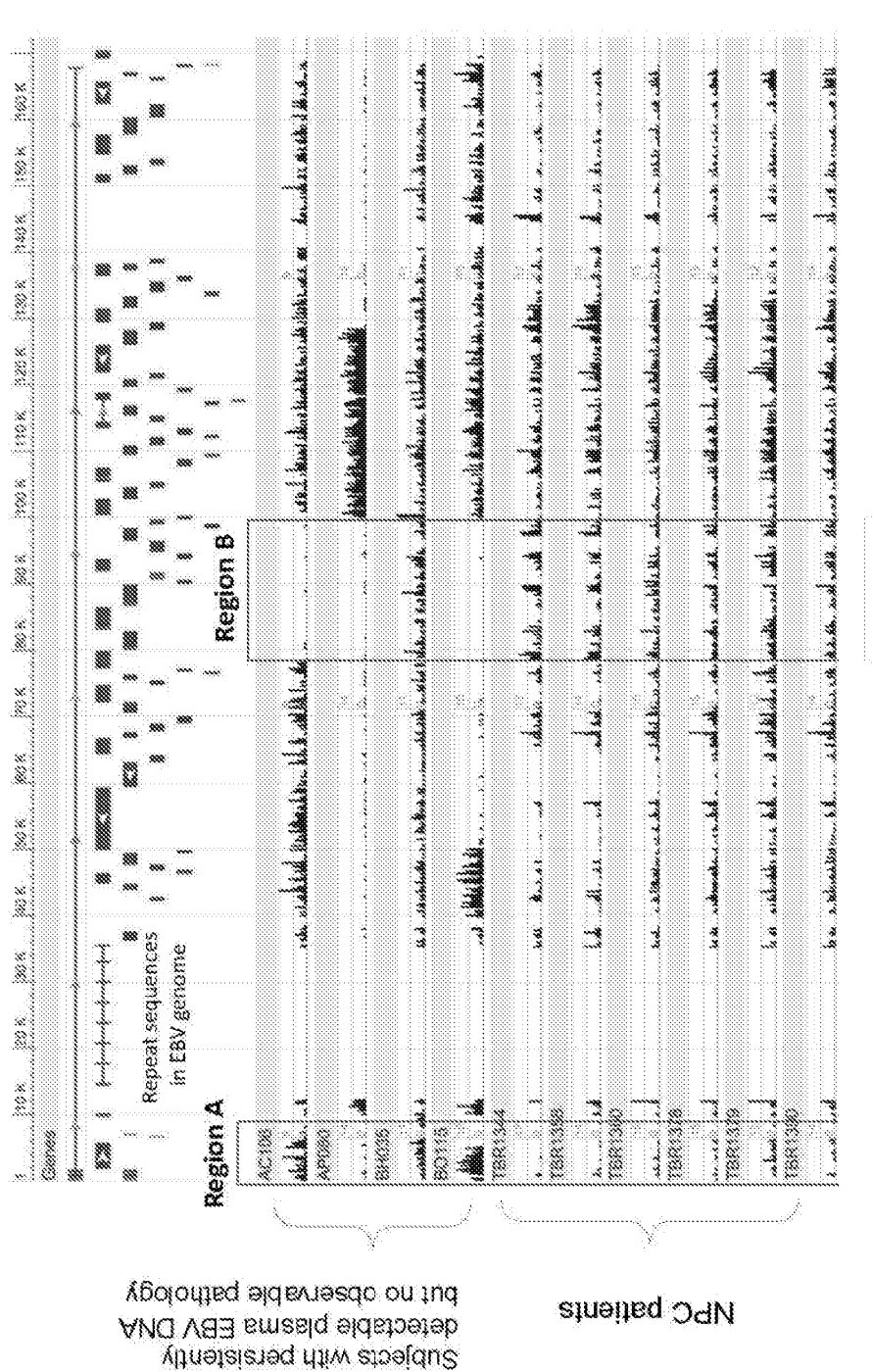


FIG. 66

400 most common ending positions
for plasma EBV DNA

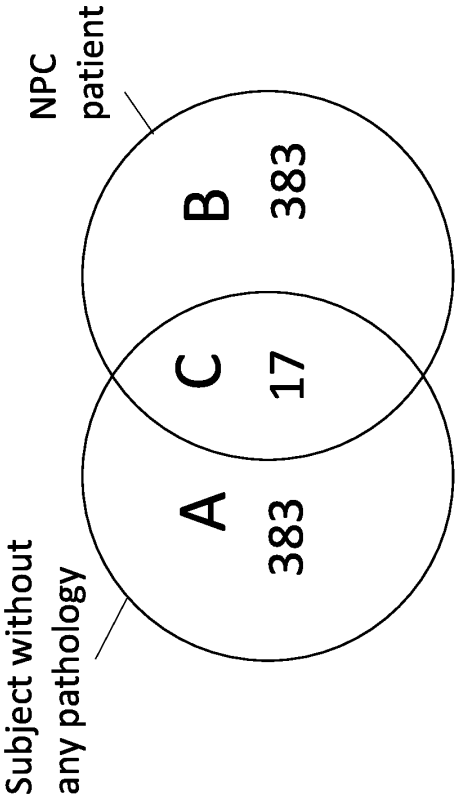


FIG. 67

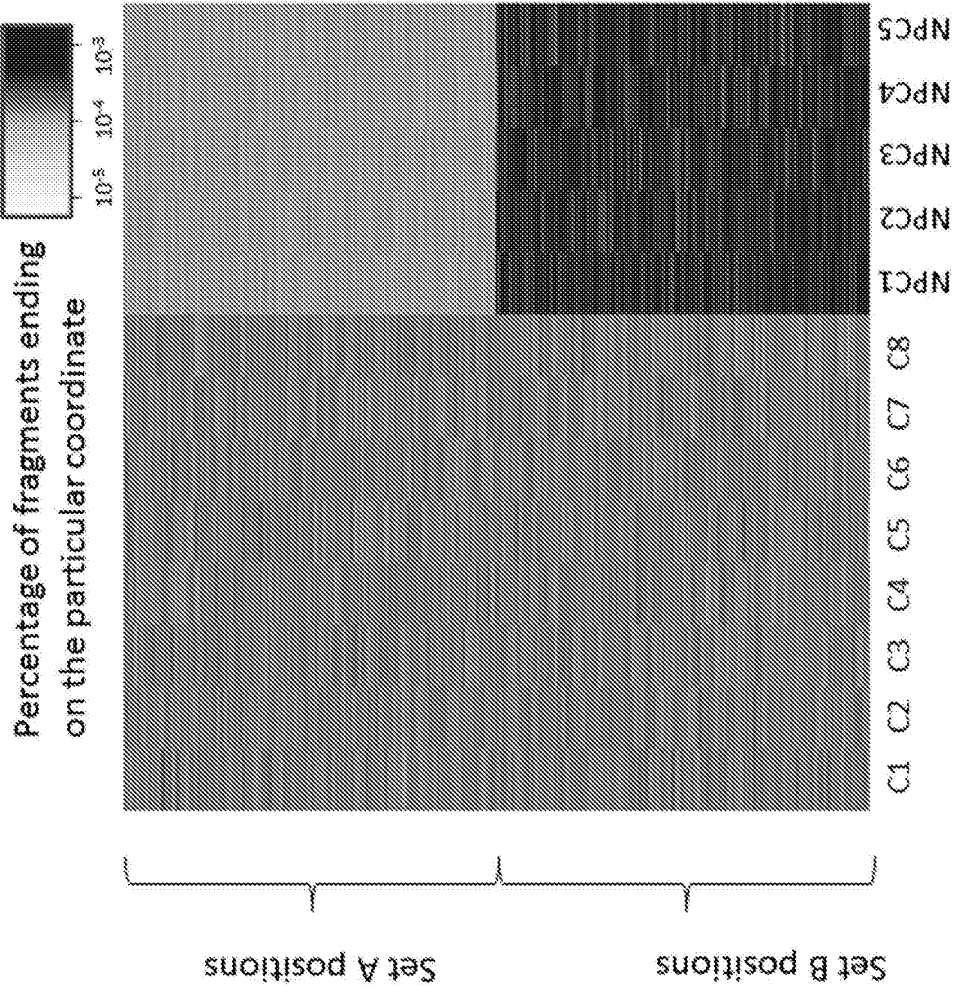


FIG. 68

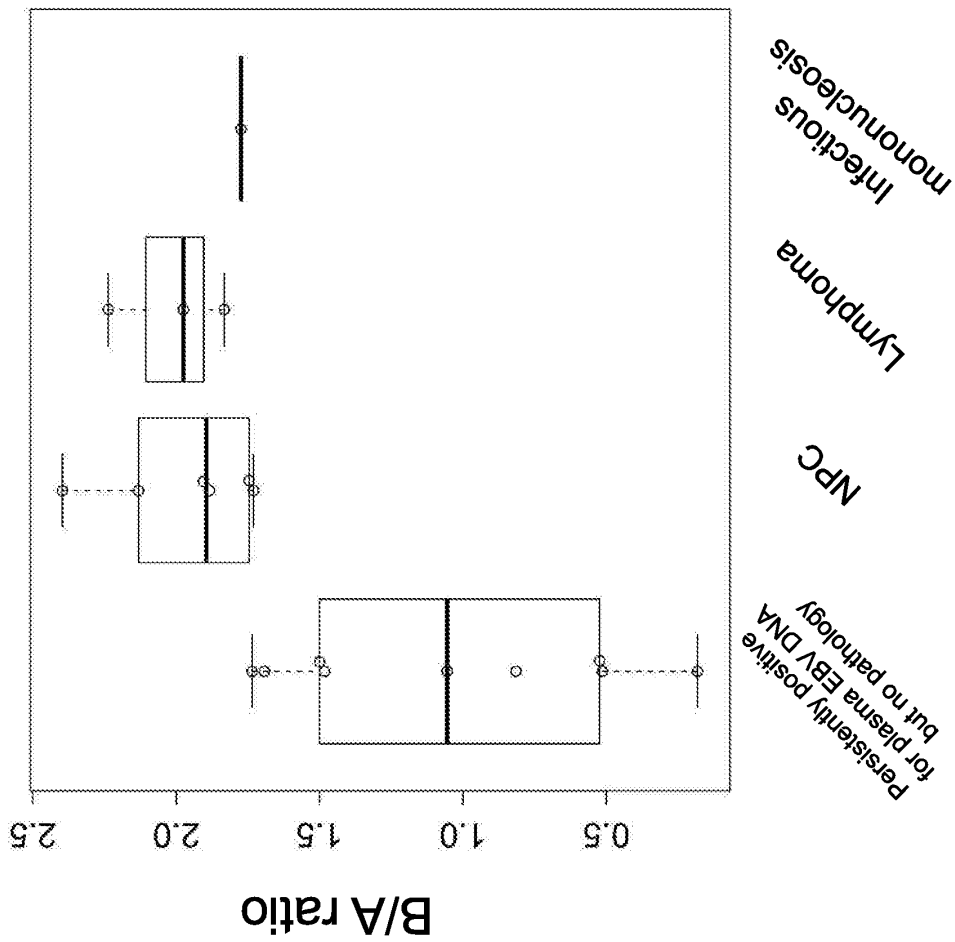


FIG. 69

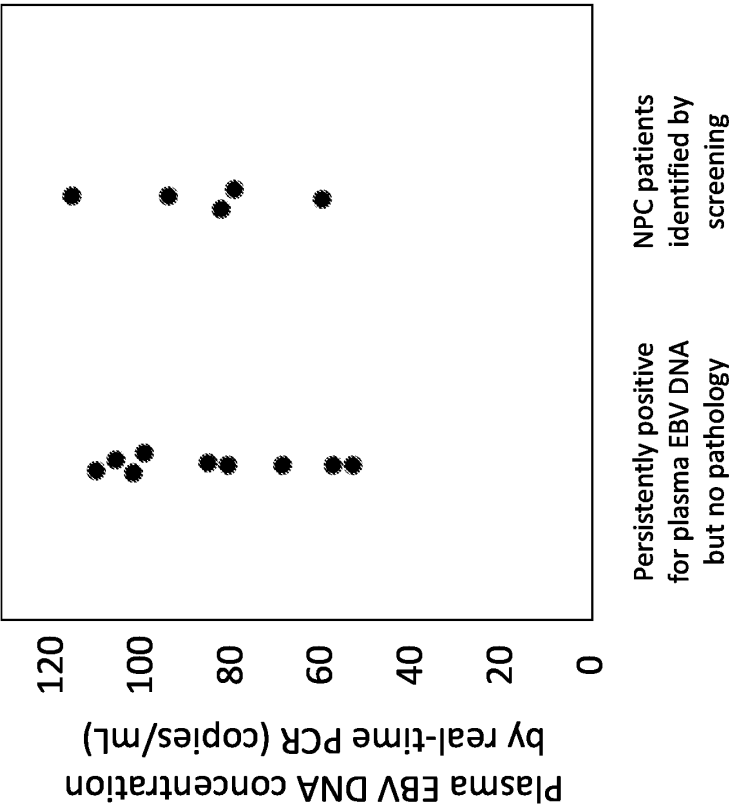


FIG. 70

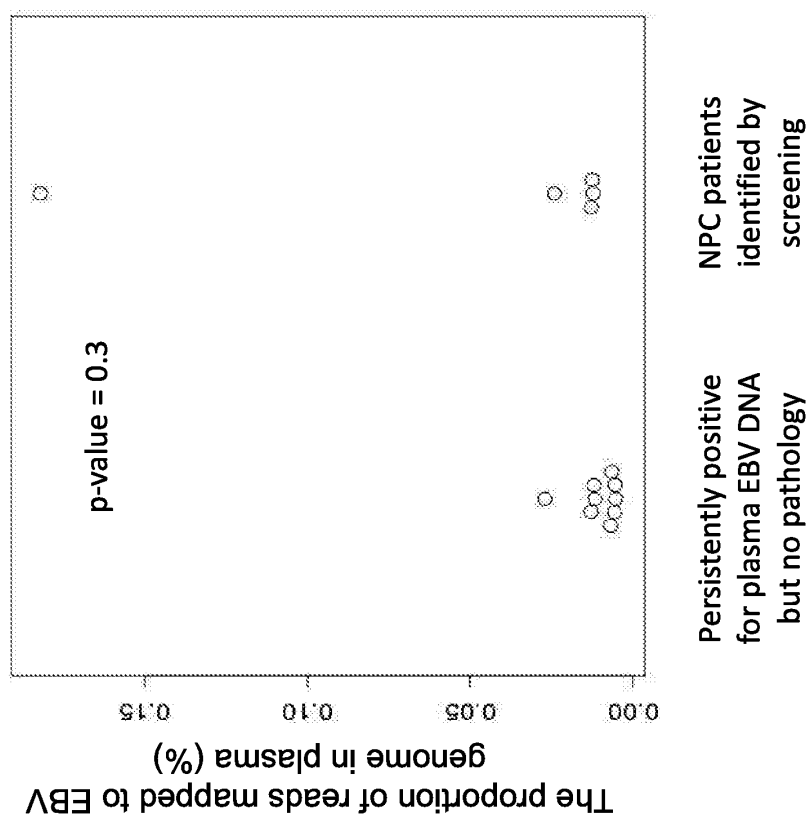


FIG. 71

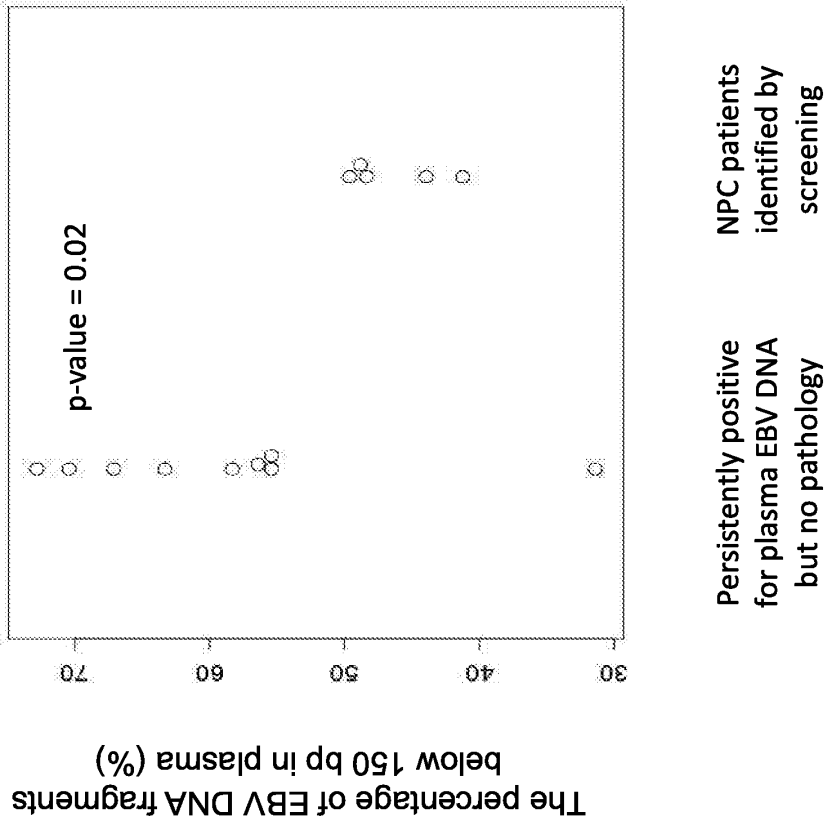


FIG. 72

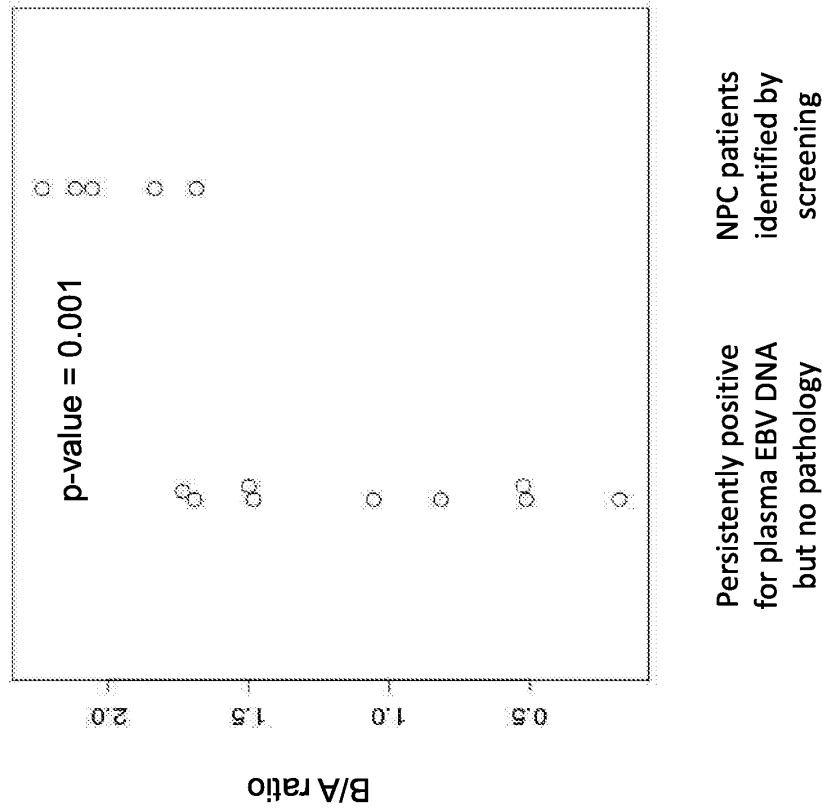
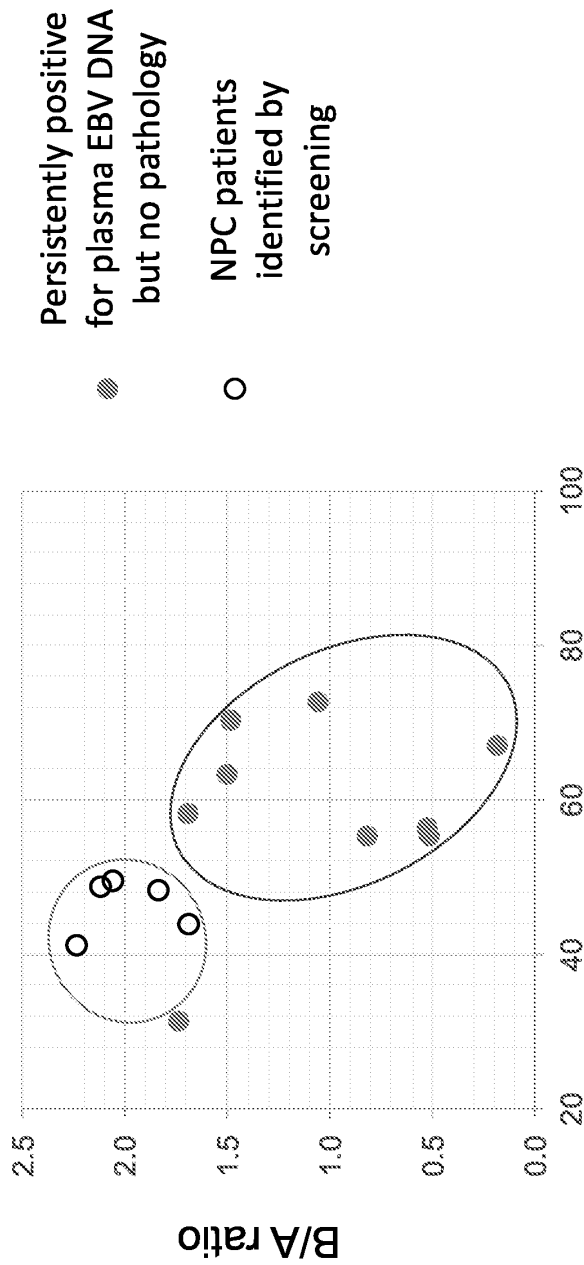


FIG. 73



The percentage of EBV DNA fragments below 150 bp in plasma (%)

FIG. 74

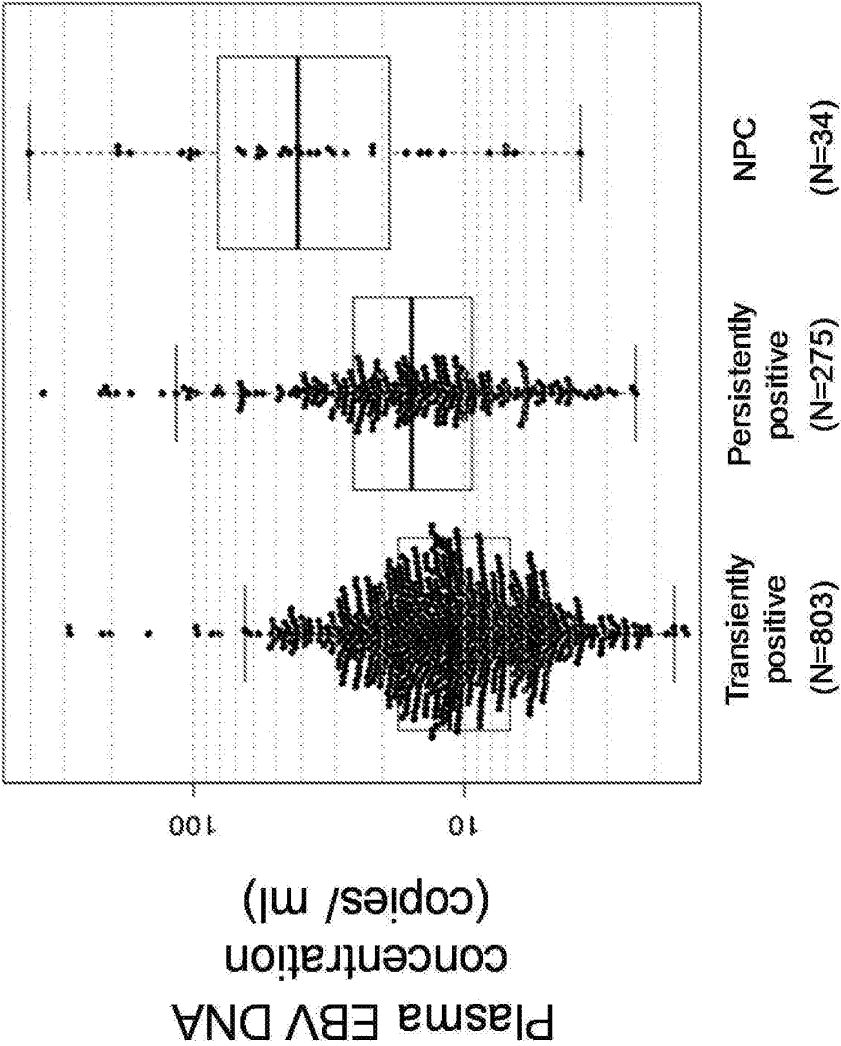


FIG. 75

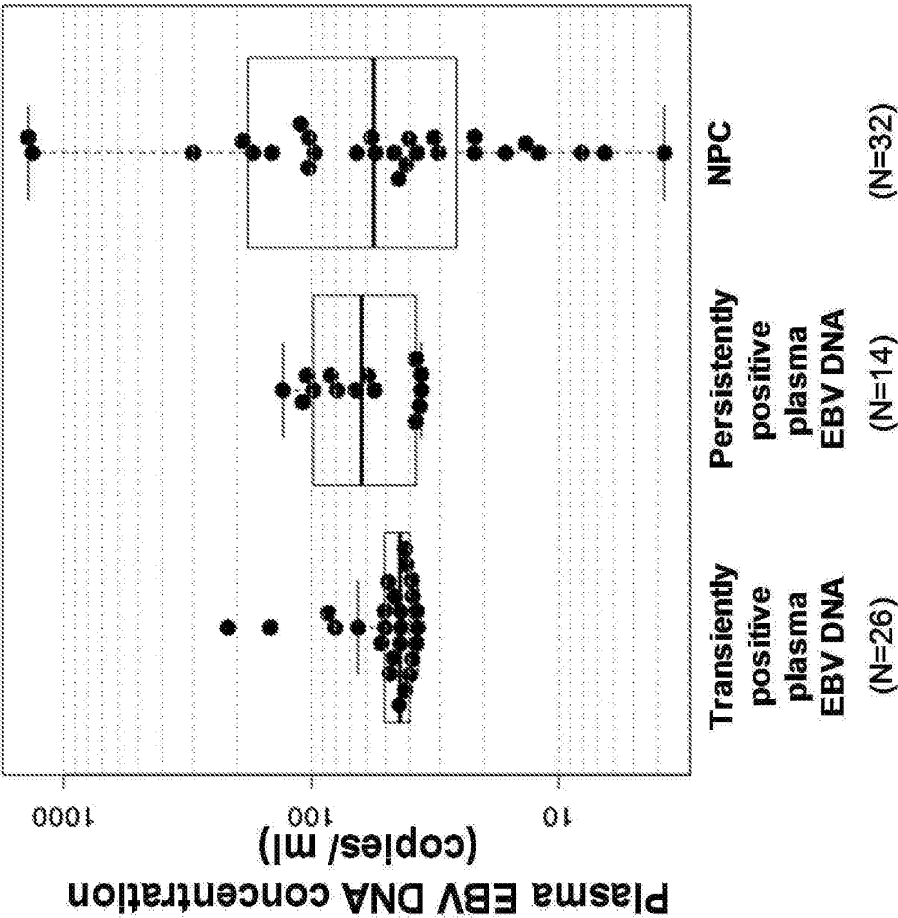


FIG. 76A

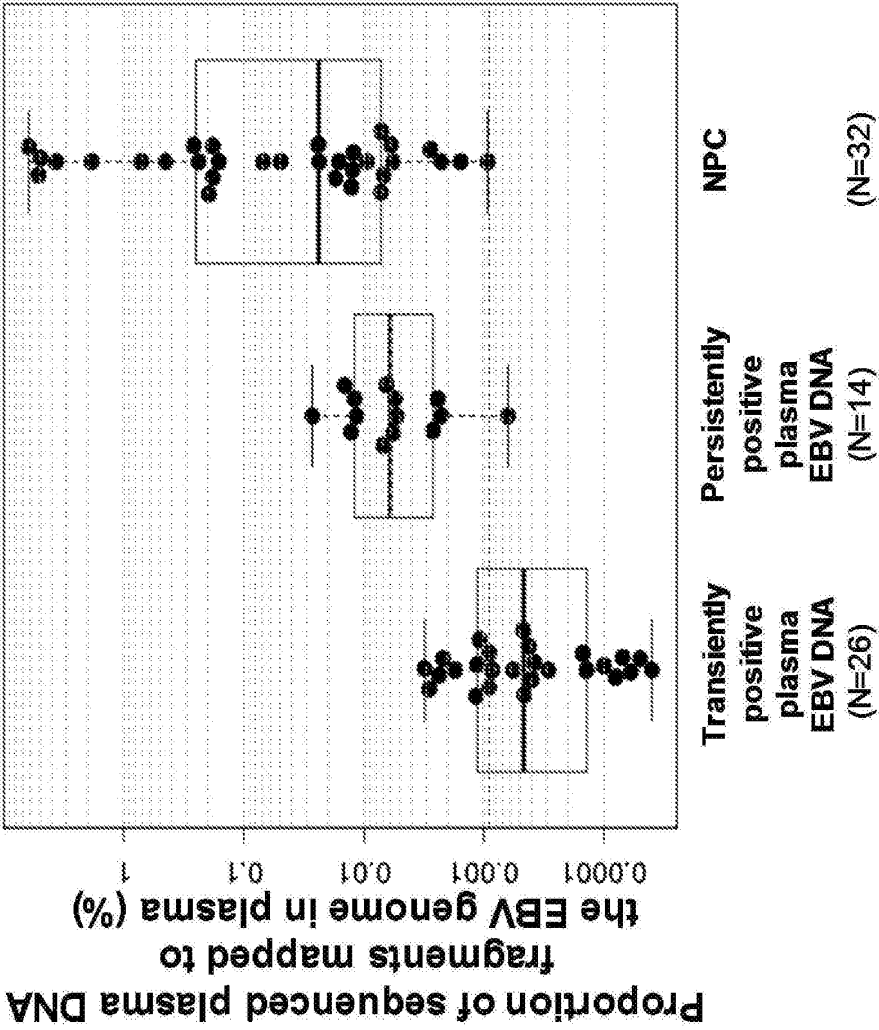


FIG. 76B

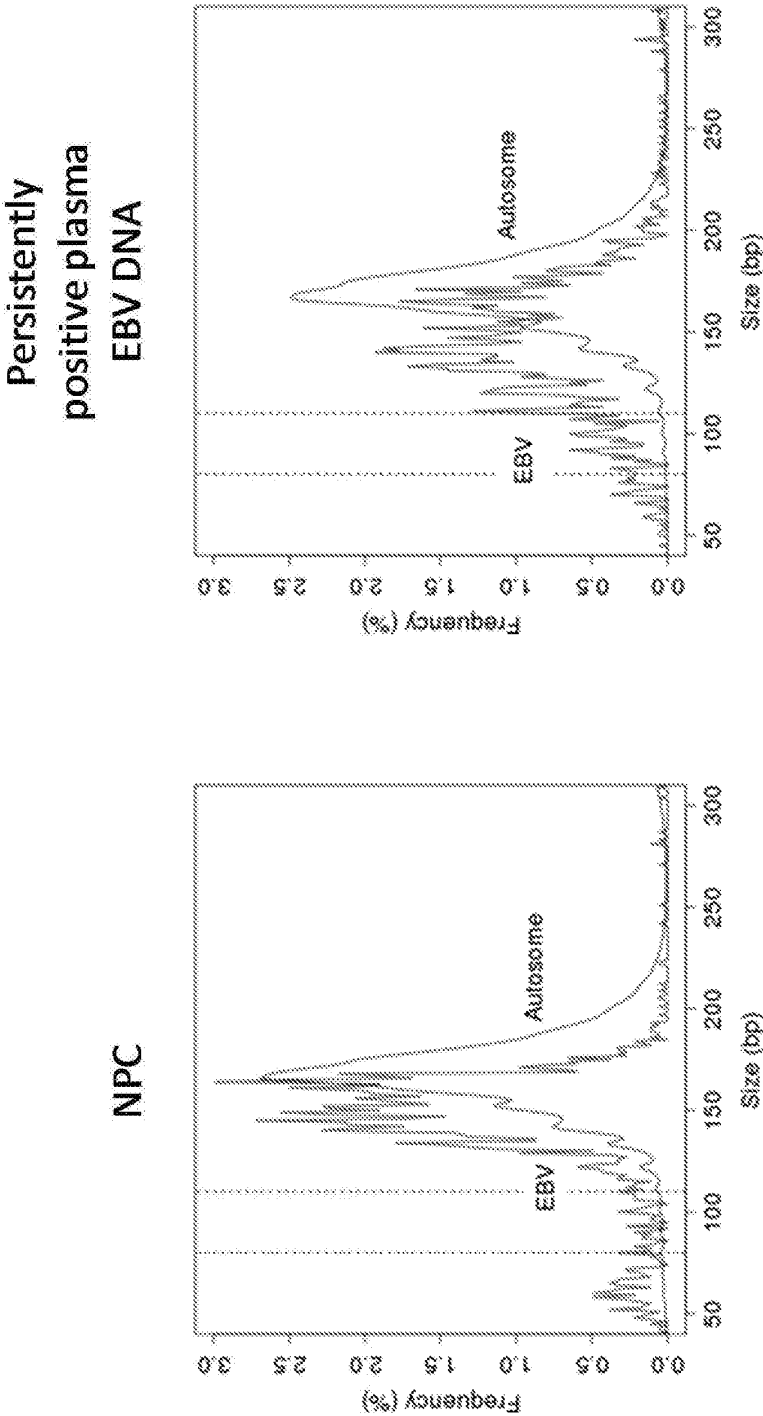


FIG. 77

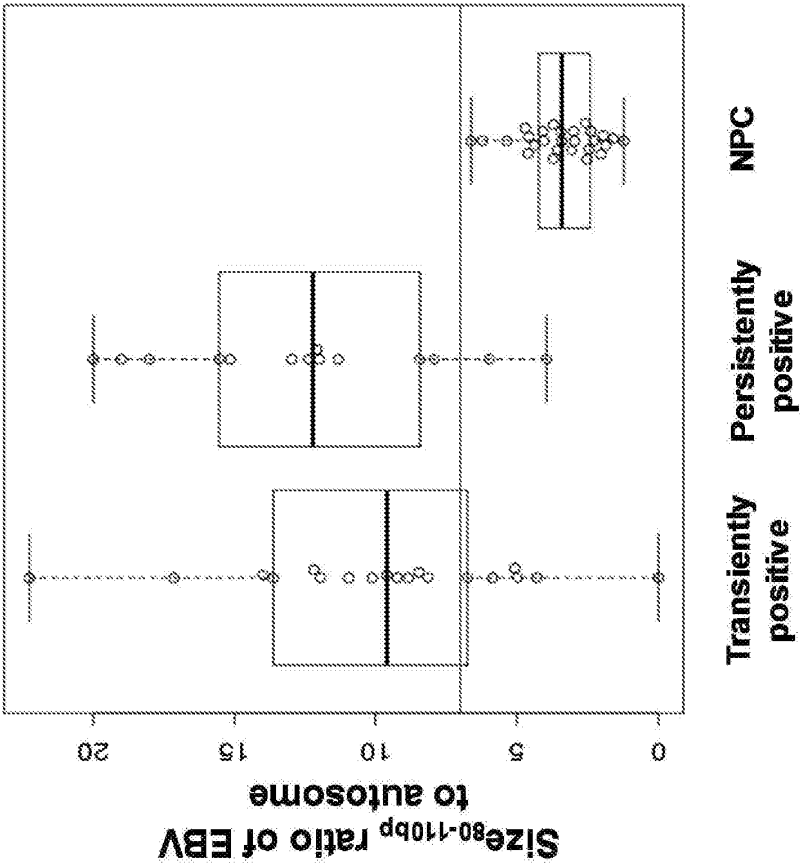


FIG. 78

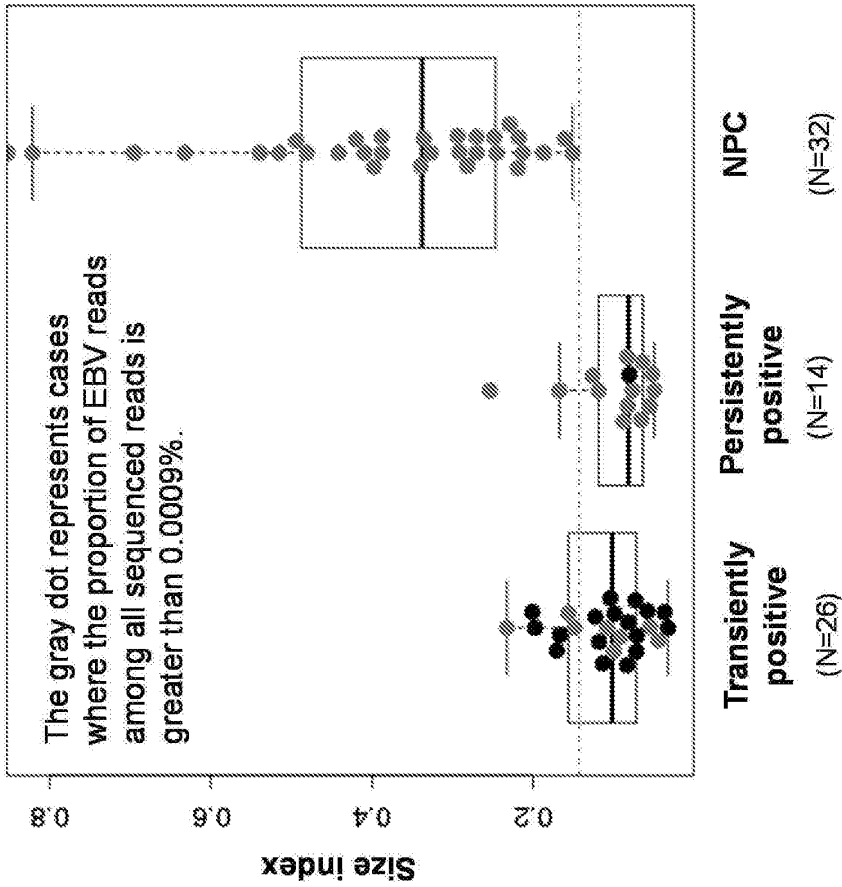


FIG. 79

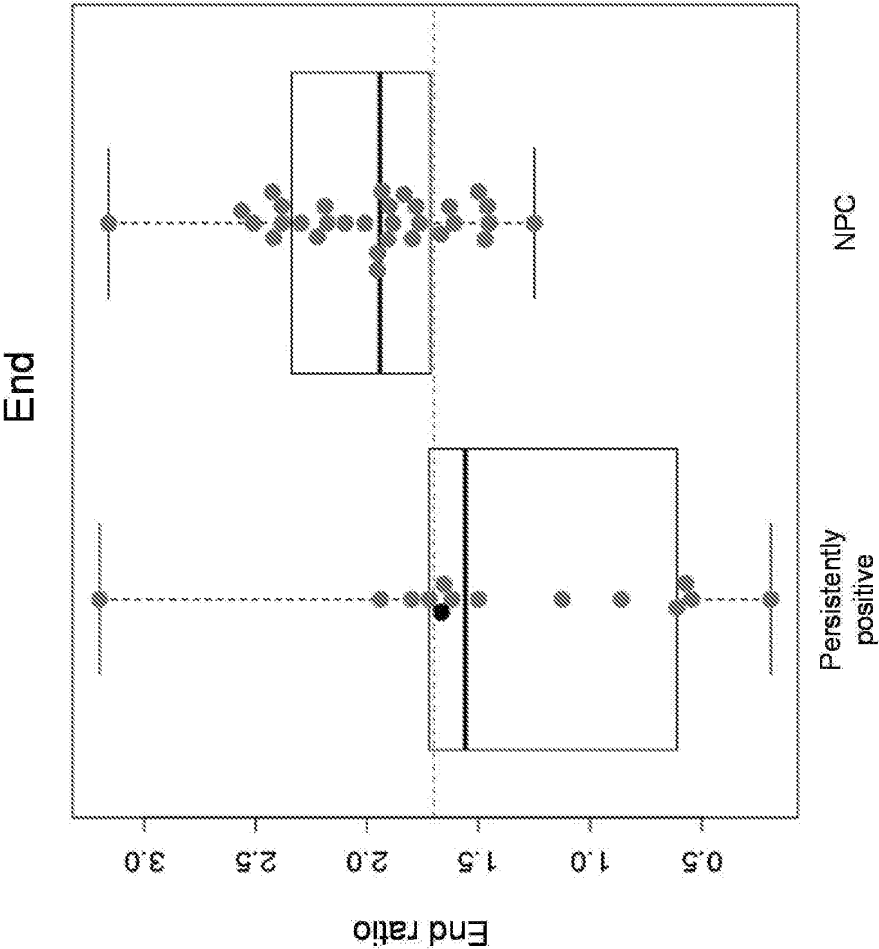


FIG. 80

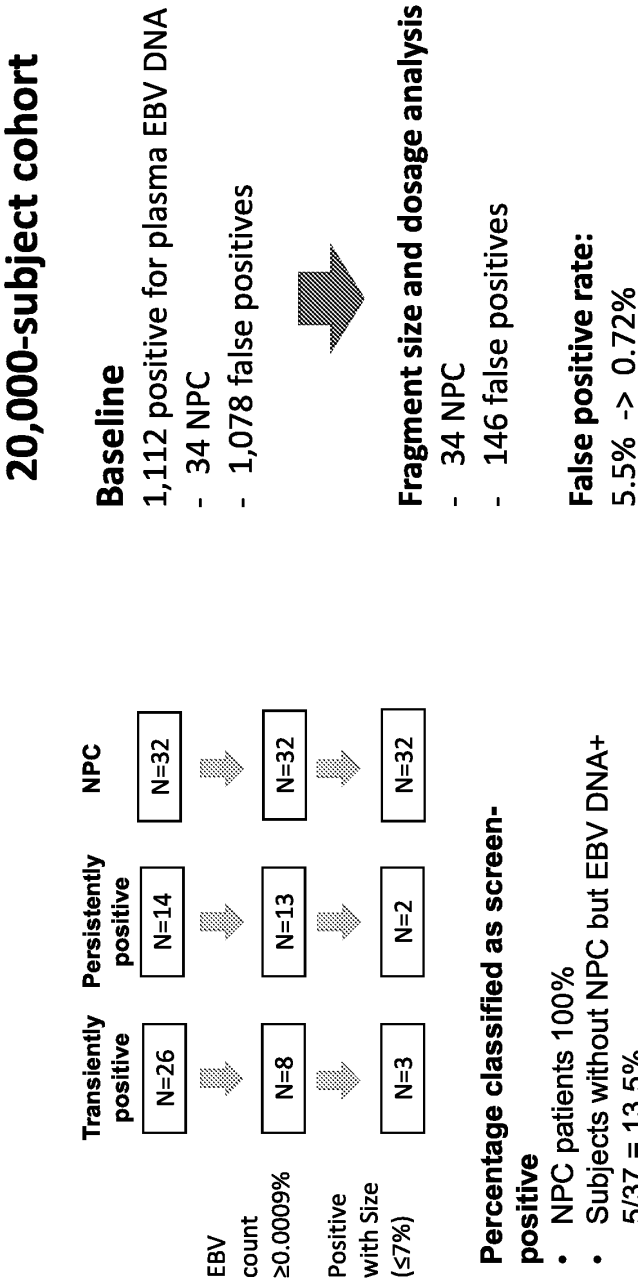


FIG. 81

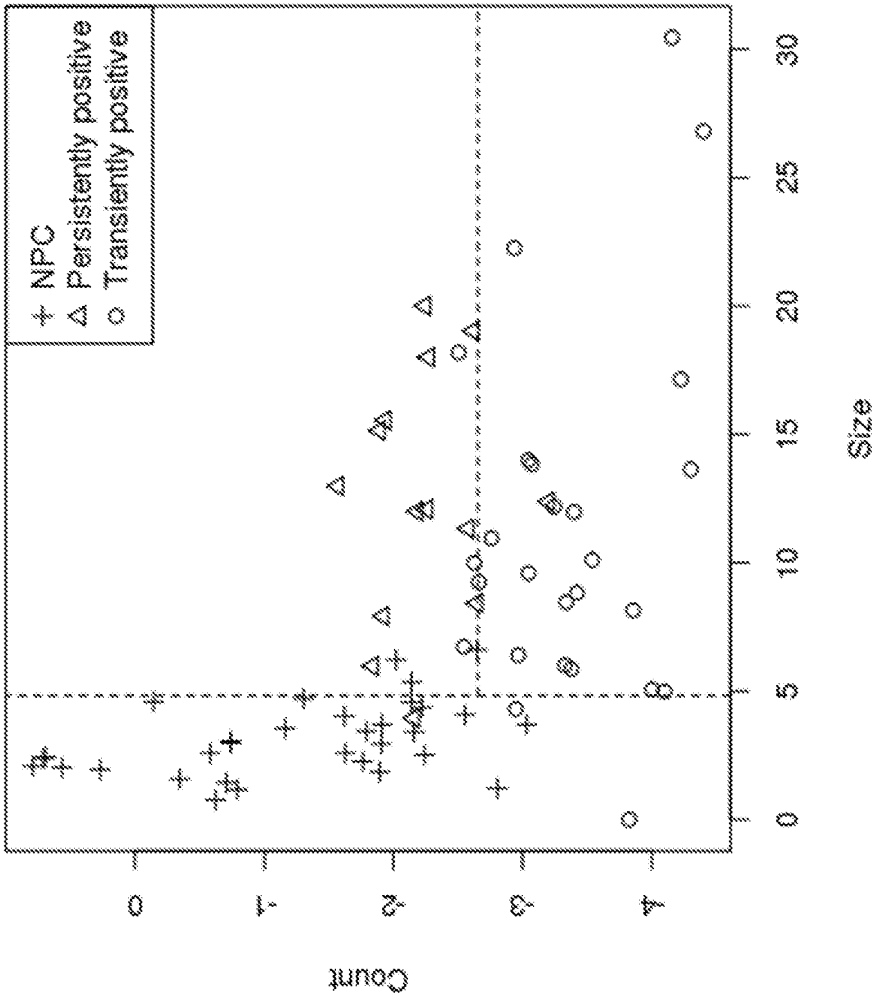


FIG. 82A

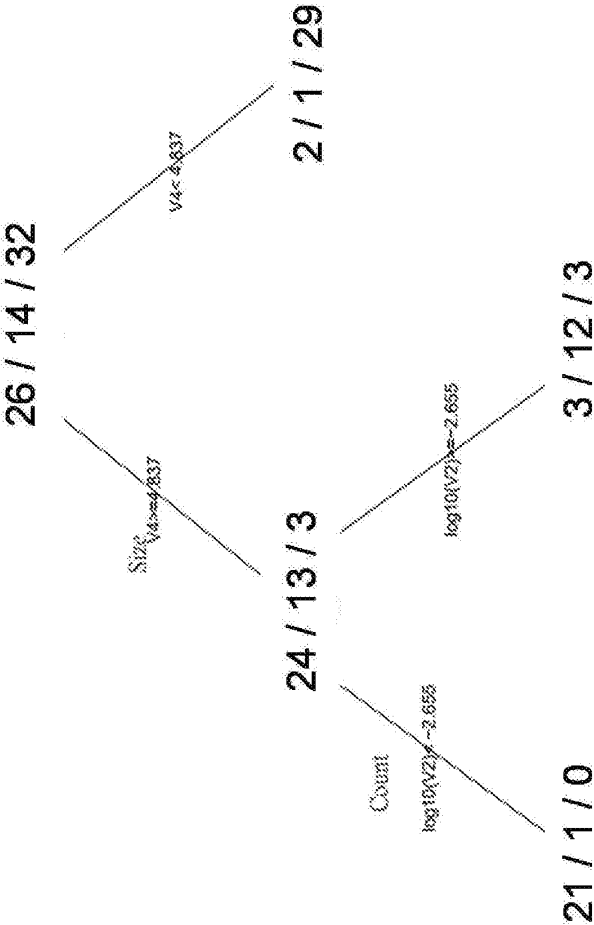


FIG. 82B

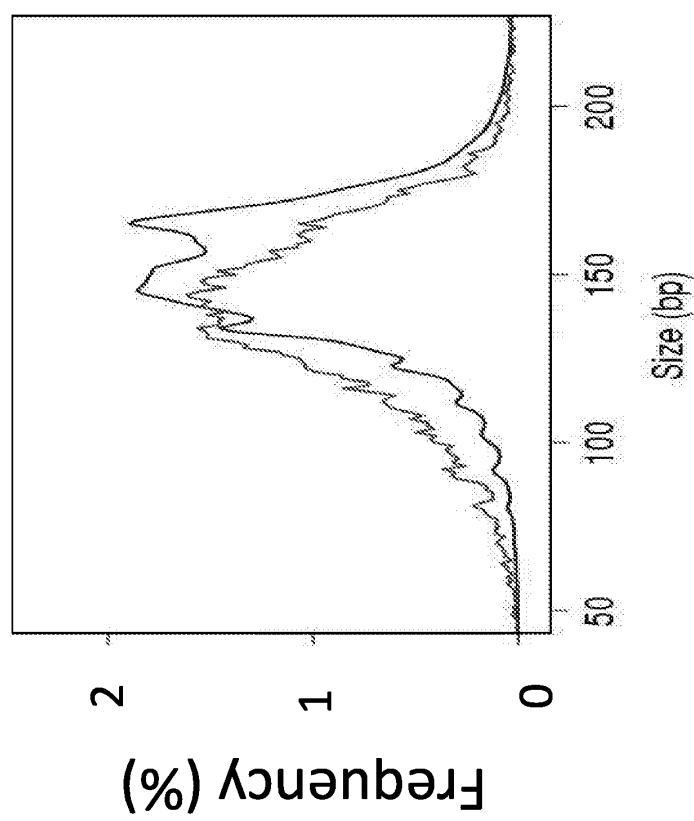
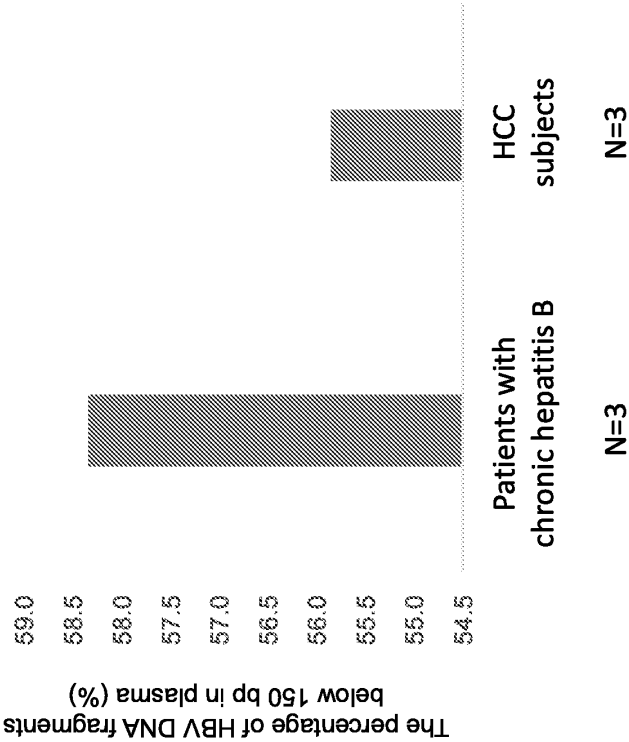


FIG. 83



The mean proportion of HBV DNA fragments below 150bp in plasma.

FIG. 84

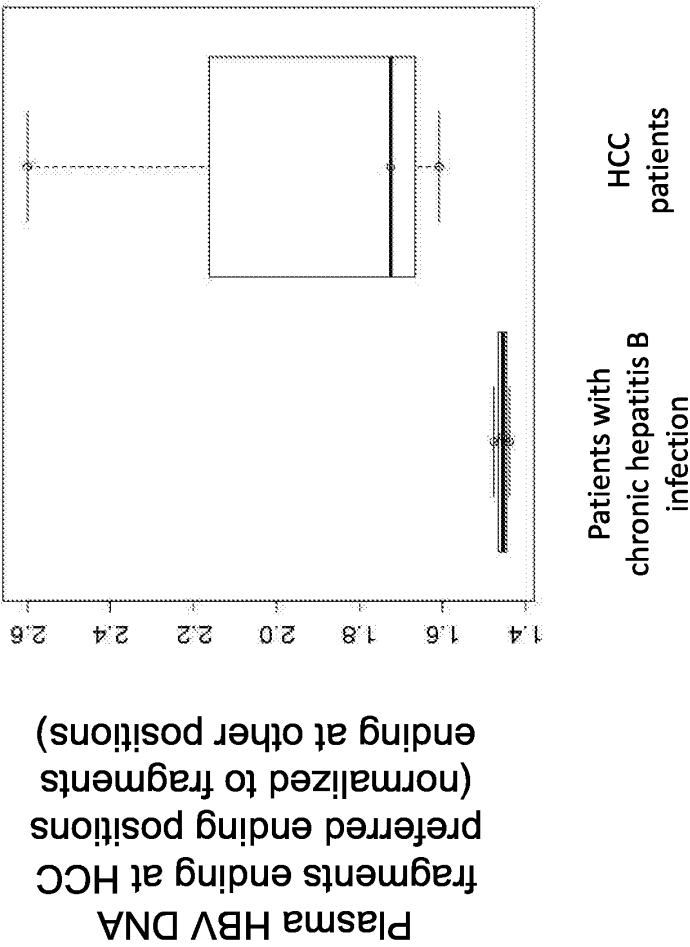


FIG. 85

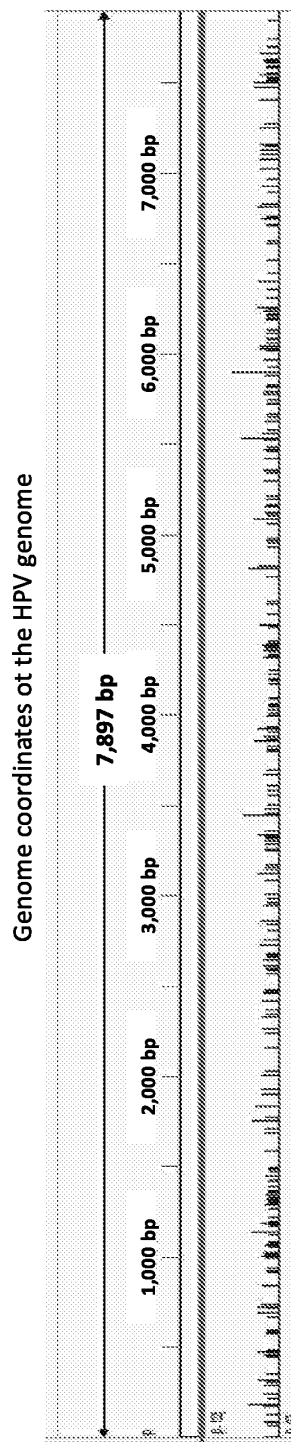


FIG. 86

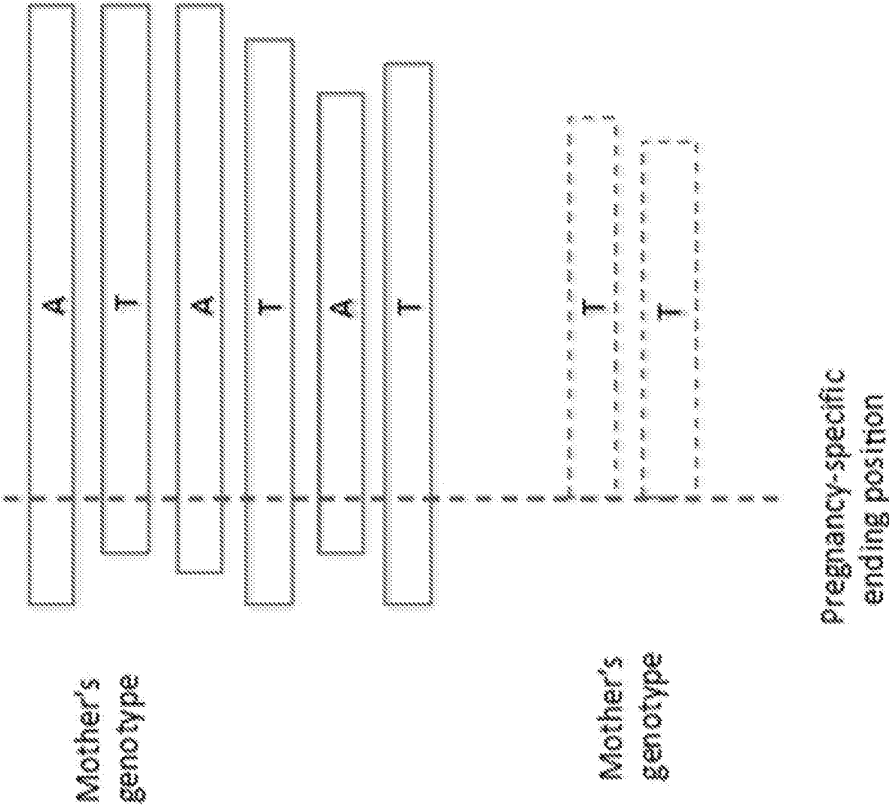
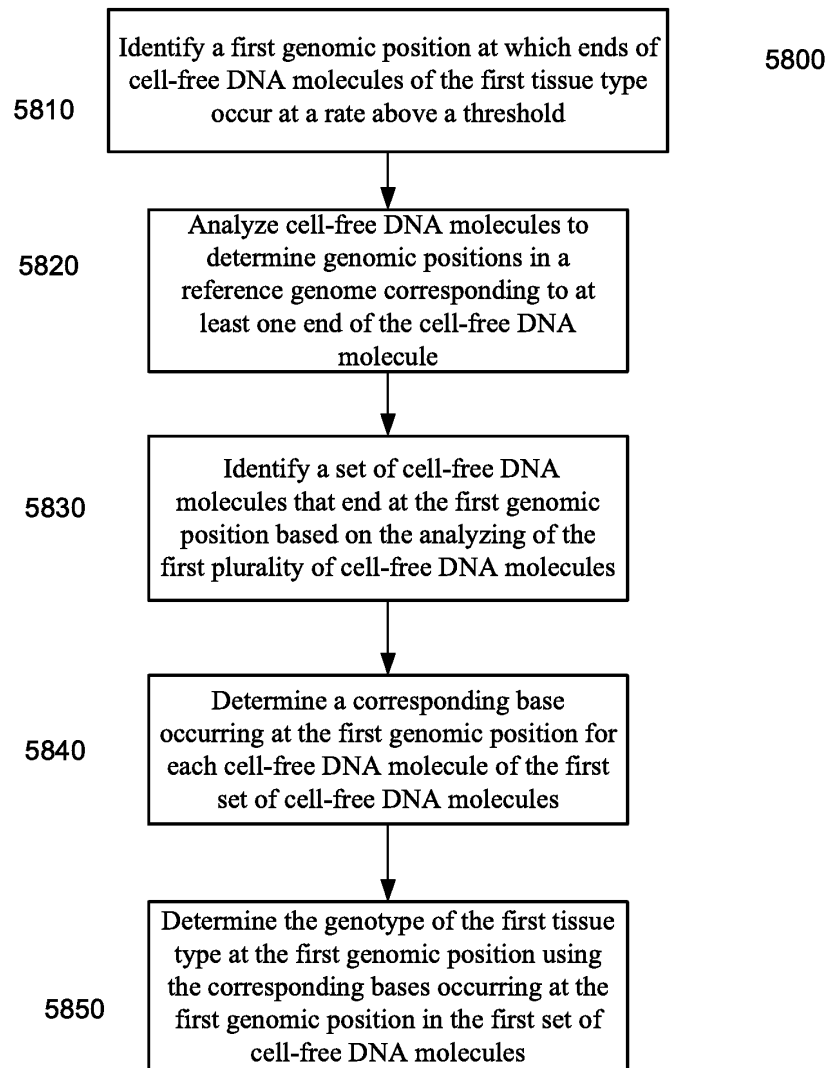


FIG. 87

**FIG. 88**

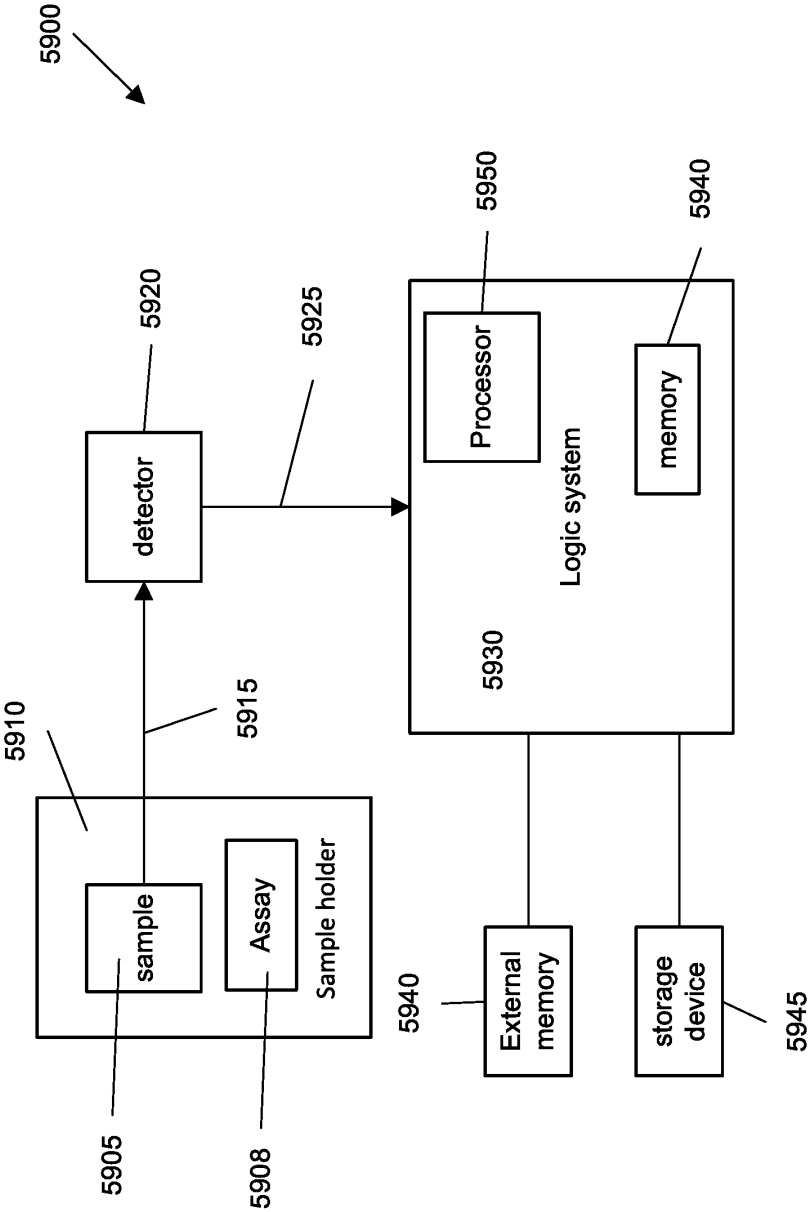


FIG. 89

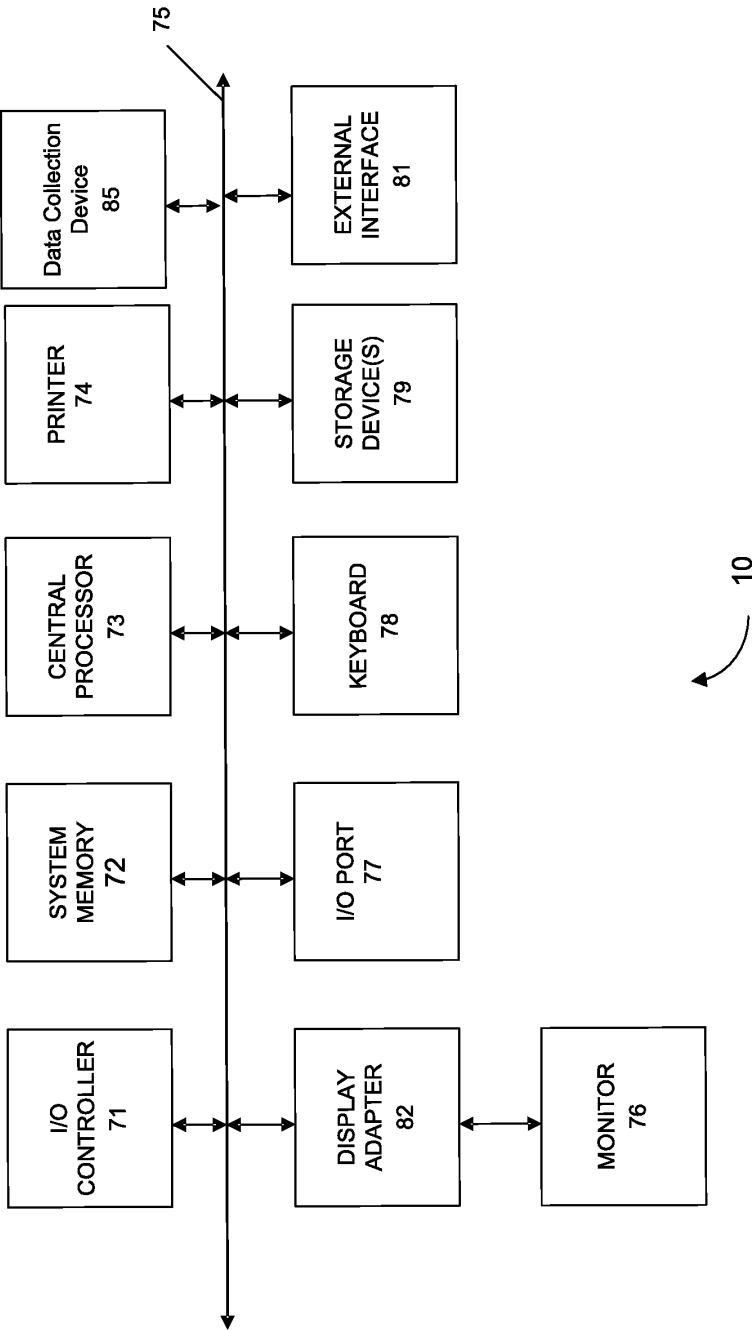


FIG. 90

FIG. 91A
Training set

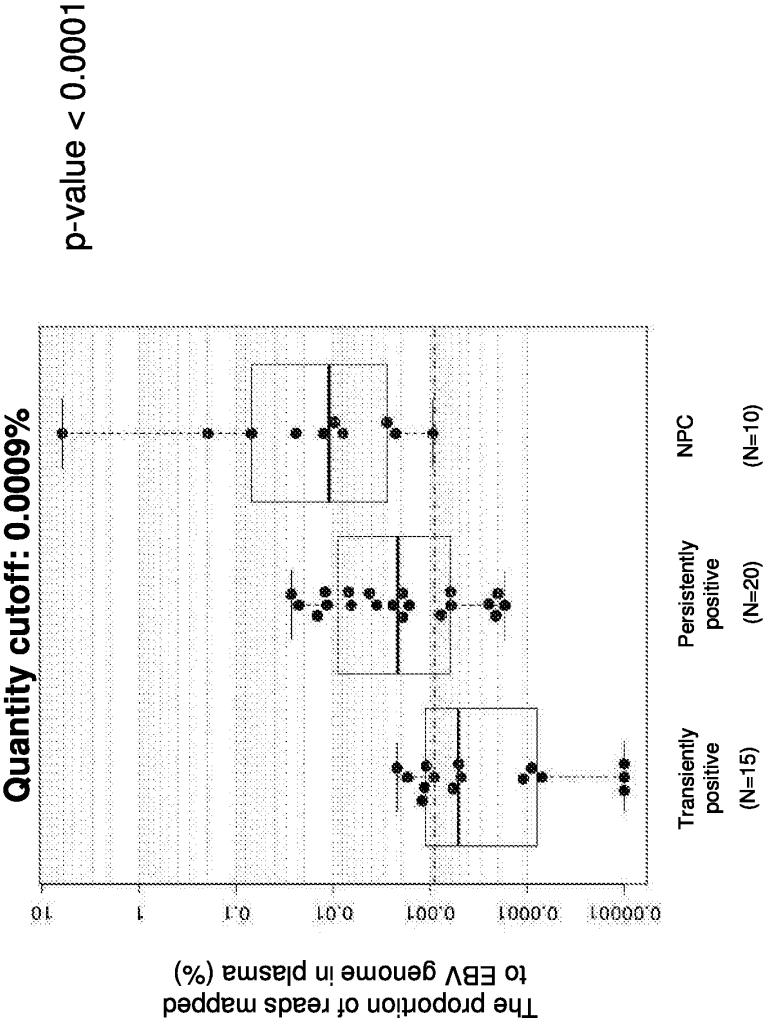


FIG. 91B
Training set

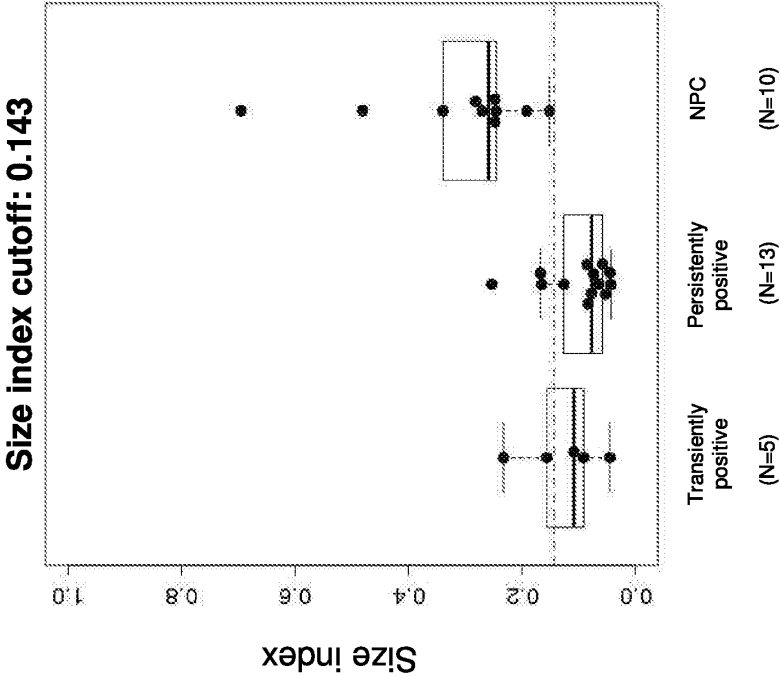


FIG. 92A
Validation set

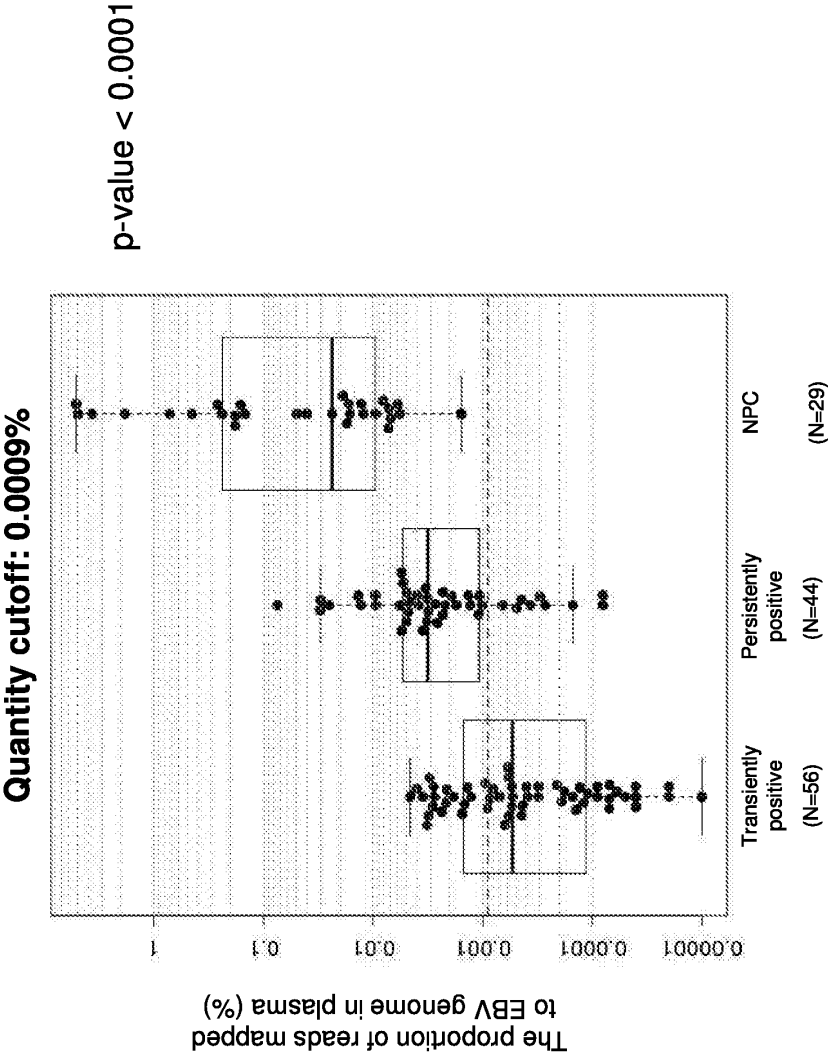
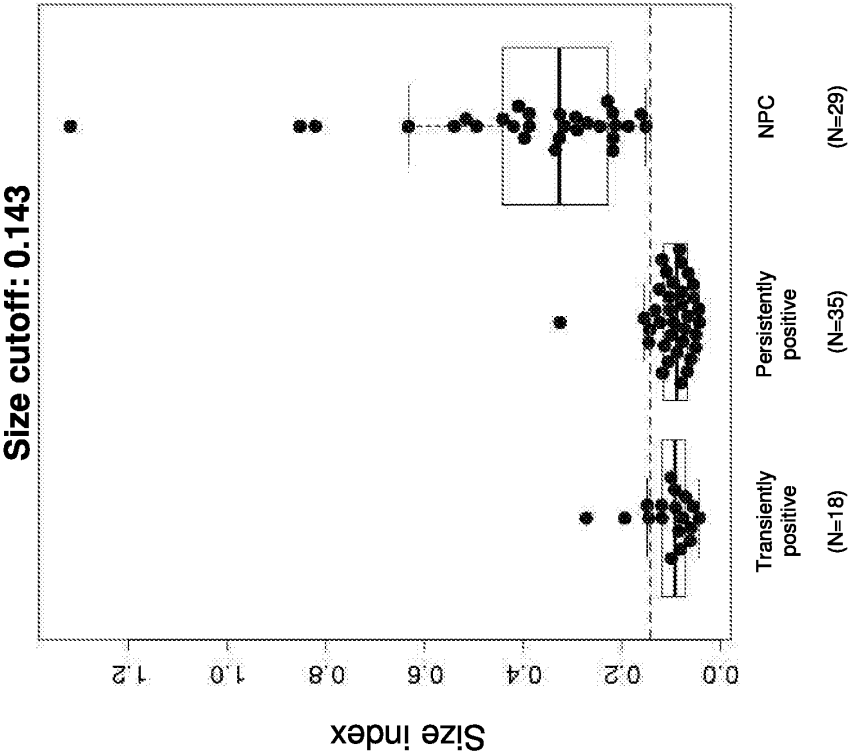


FIG. 92B
Validation set



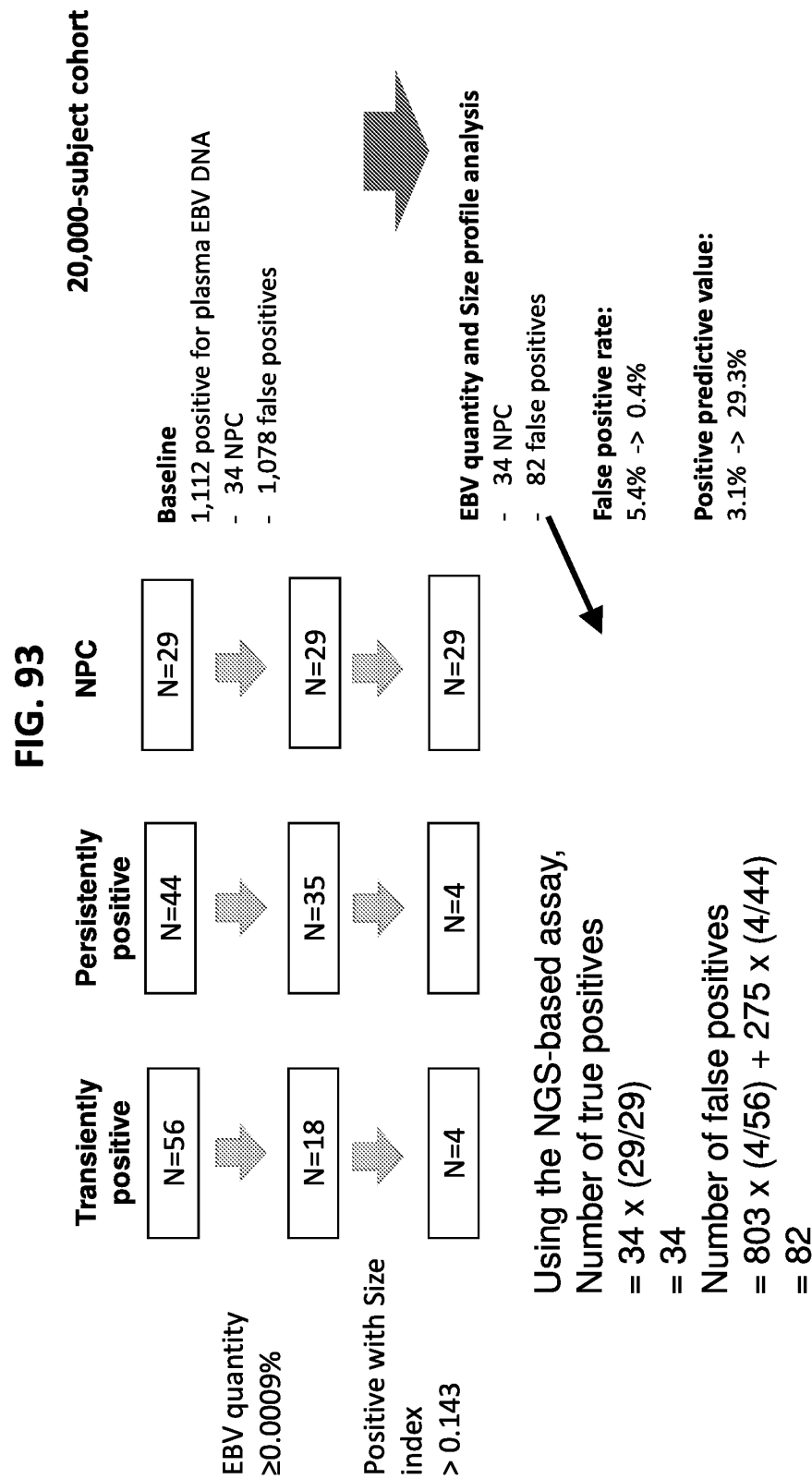


FIG. 94

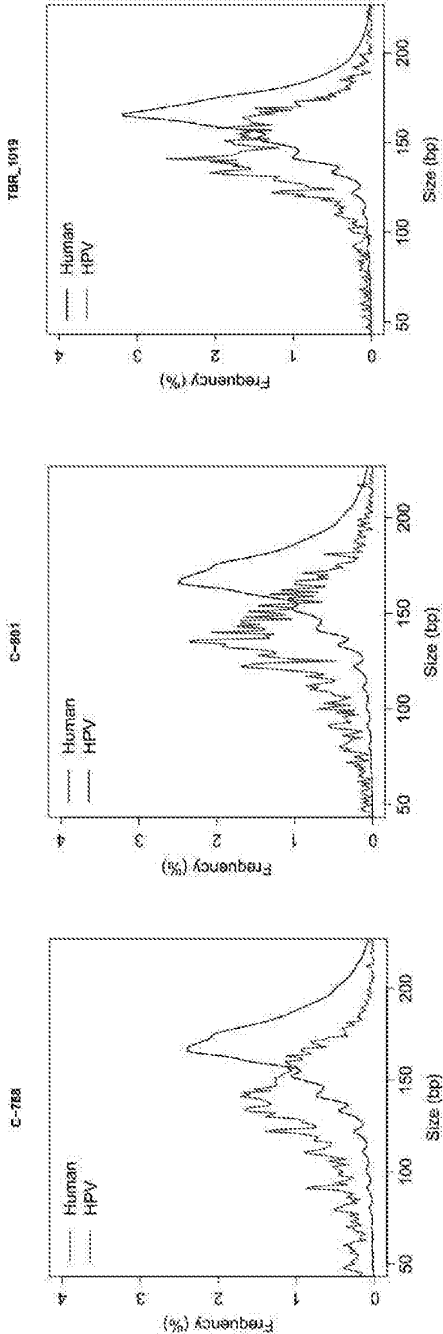


FIG. 95

