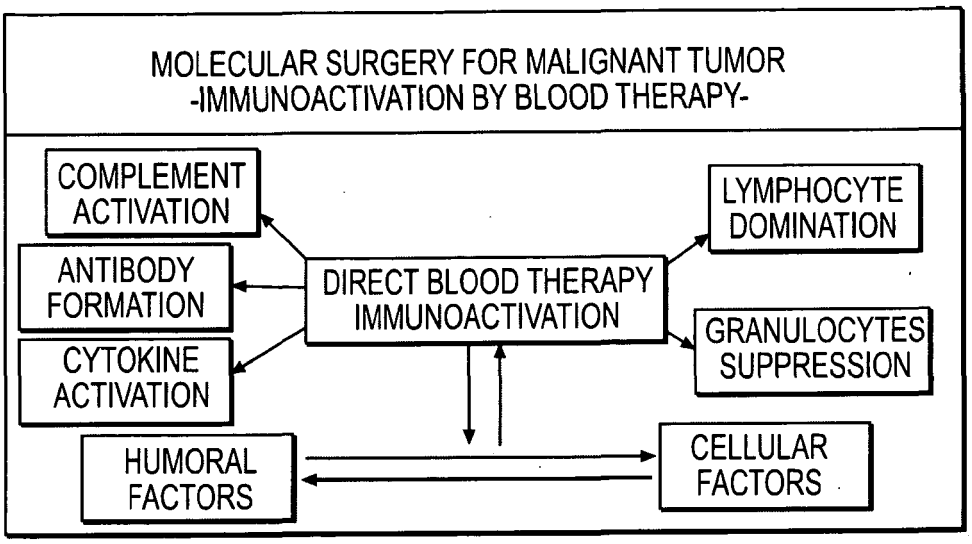

MOLECULAR SURGERY FOR MALIGNANT TUMOR
-IMMUNOACTIVATION BY BLOOD THERAPY-
COMPLEMENT ACTIVATION
ANTIBODY FORMATION
CYTOKINE ACTIVATION
HUMORAL FACTORS
DIRECT BLOOD THERAPY IMMUNOACTIVATION
LYMPHOCYTE DOMINATION
GRANULOCYTES SUPPRESSION
CELLULAR FACTORS

FIG. 1

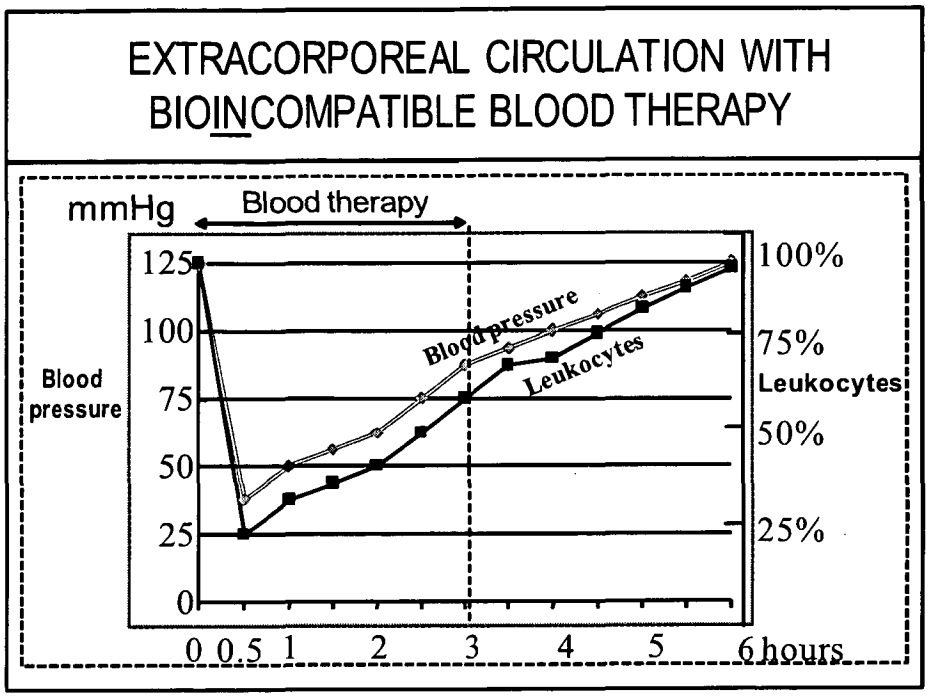

EXTRACORPOREAL CIRCULATION WITH
BIOINCOMPATIBLE BLOOD THERAPY
mmHg
Blood therapy
125
100
75
50
25
0
Blood pressure
Blood pressure
Leukocytes
100%
75%
Leukocytes
50%
25%
0 0.5 1 2 3 4 5 6 hours

FIG. 2

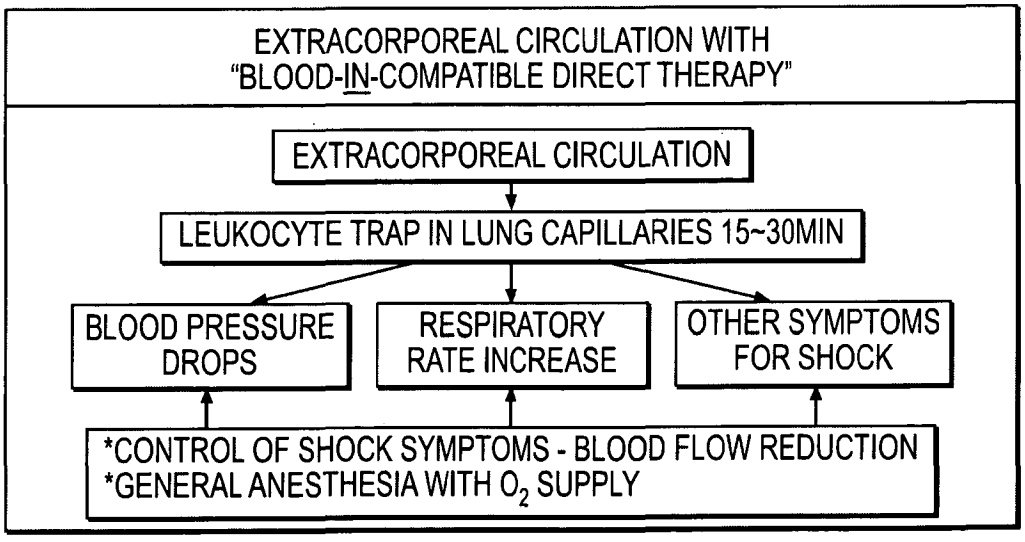

EXTRACORPOREAL CIRCULATION WITH
"BLOOD-IN-COMPATIBLE DIRECT THERAPY"
EXTRACORPOREAL CIRCULATION
LEUKOCYTE TRAP IN LUNG CAPILLARIES 15~30MIN
BLOOD PRESSURE DROPS
RESPIRATORY RATE INCREASE
OTHER SYMPTOMS FOR SHOCK
*CONTROL OF SHOCK SYMPTOMS - BLOOD FLOW REDUCTION
*GENERAL ANESTHESIA WITH O_2 SUPPLY

FIG. 3

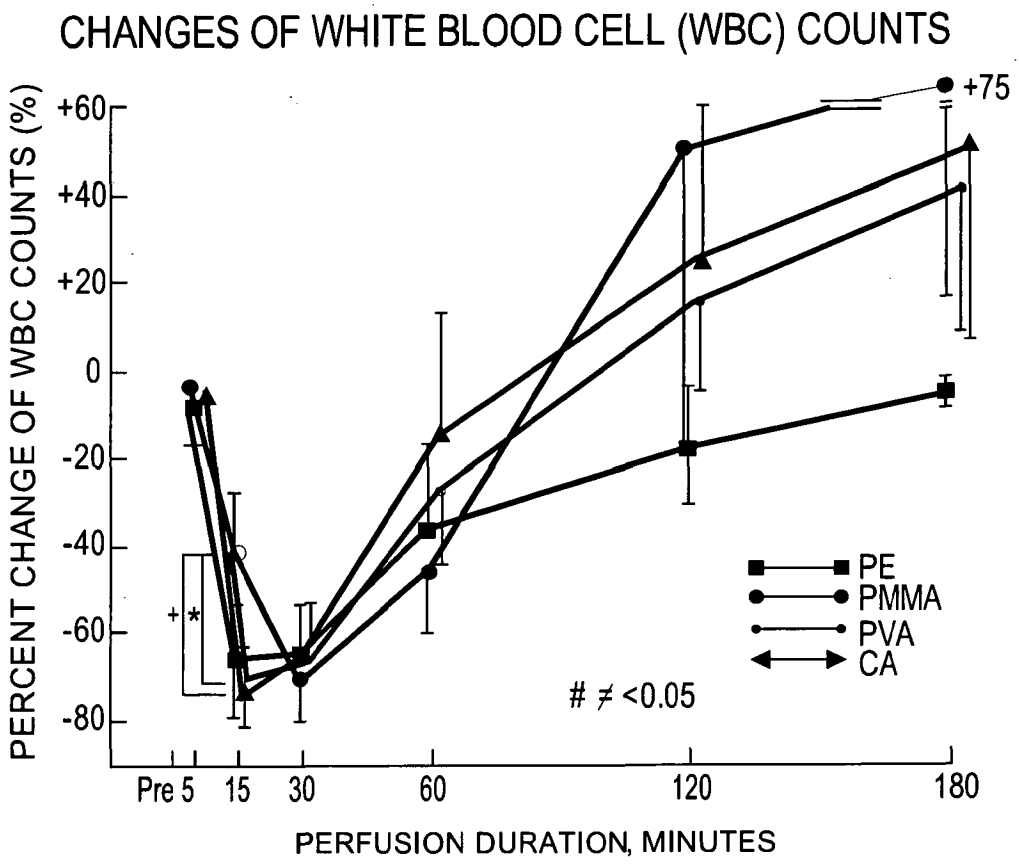

CHANGES OF WHITE BLOOD CELL (WBC) COUNTS
PERCENT CHANGE OF WBC COUNTS (%)
+60
+40
+20
0
-20
-40
-60
-80
+75
+ *
PE
PMMA
PVA
CA
≠ <0.05
Pre 5
15
30
60
120
180
PERFUSION DURATION, MINUTES

FIG. 4

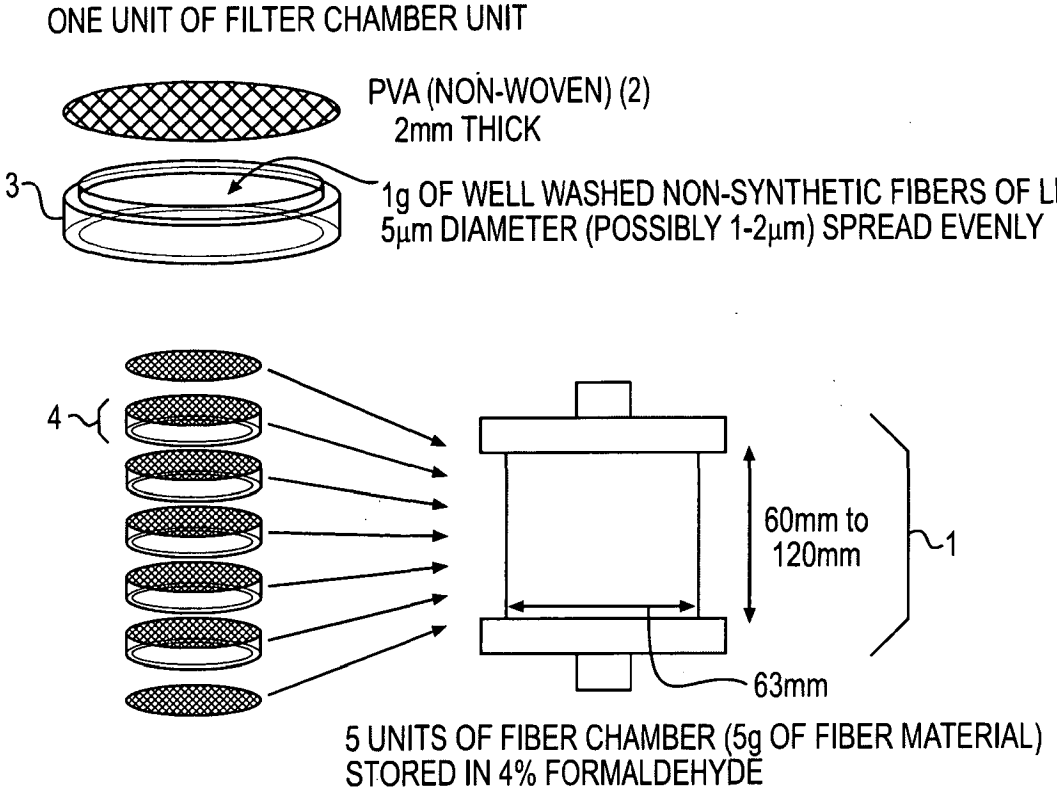
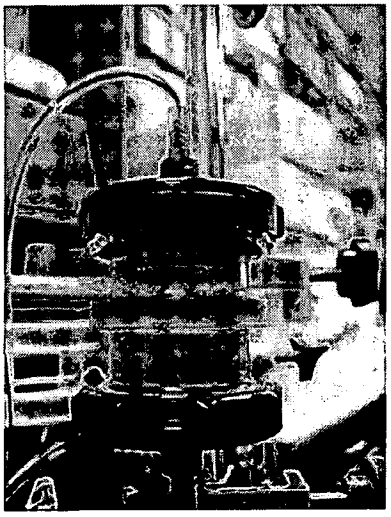

ONE UNIT OF FILTER CHAMBER UNIT
PVA (NON-WOVEN) (2)
2mm THICK
3
1g OF WELL WASHED NON-SYNTHETIC FIBERS OF LESS THAN
5μm DIAMETER (POSSIBLY 1-2μm) SPREAD EVENLY
4
60mm to
120mm
1
63mm
5 UNITS OF FIBER CHAMBER (5g OF FIBER MATERIAL)
STORED IN 4% FORMALDEHYDE

FIG. 5A

FIG. 5B



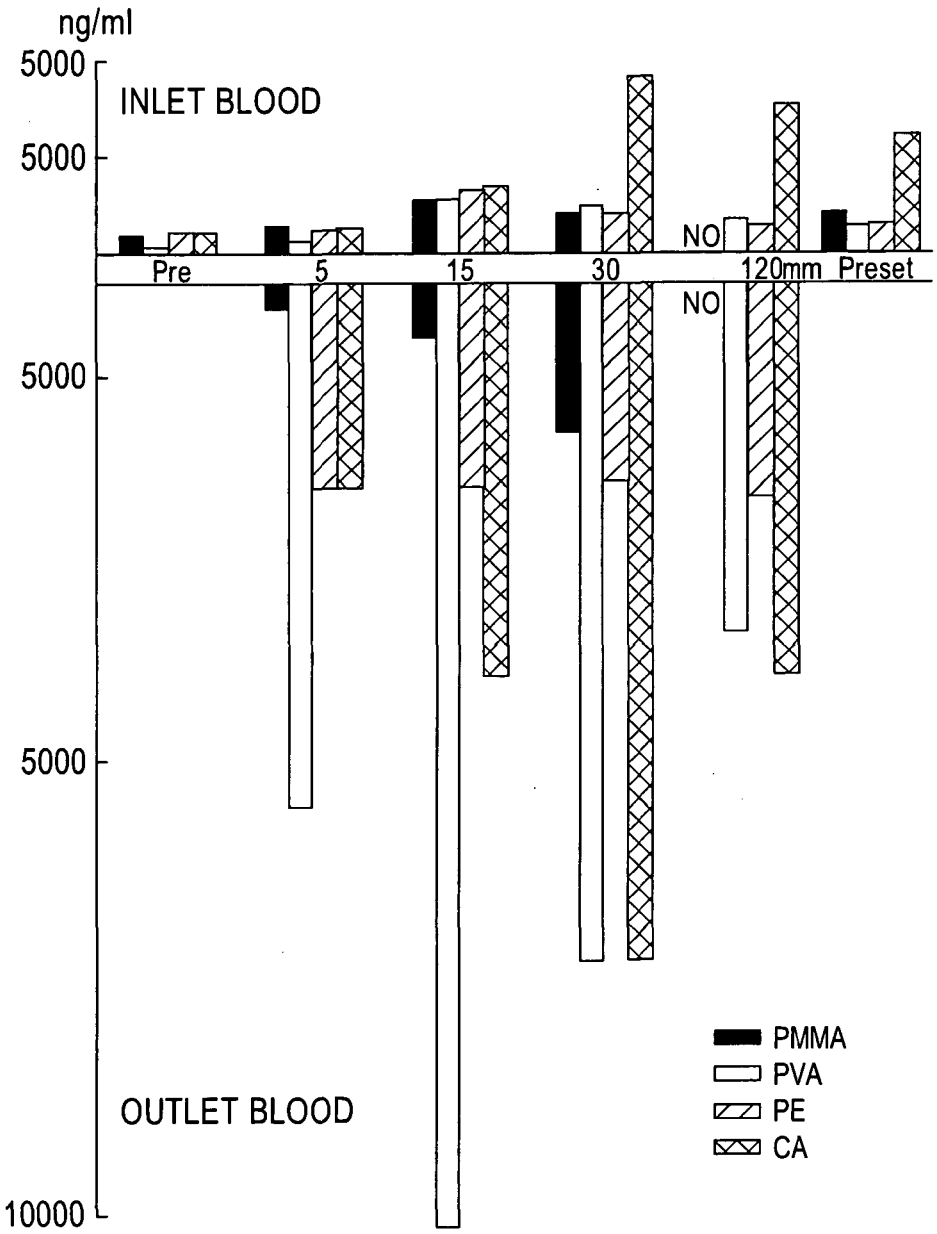

ng/ml
5000
INLET BLOOD
5000
NO
Pre
5
15
30
120mm
Preset
NO
5000
5000
PMMA
PVA
PE
CA
OUTLET BLOOD
10000

FIG. 6

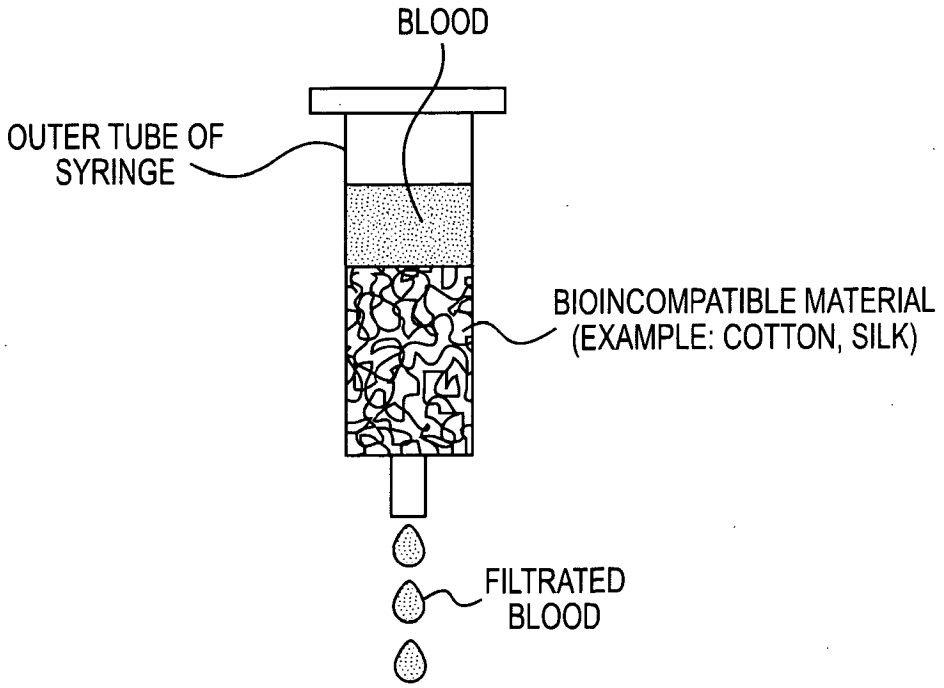

BLOOD
OUTER TUBE OF SYRINGE
BIOINCOMPATIBLE MATERIAL (EXAMPLE: COTTON, SILK)
FILTRATED BLOOD

FIG. 7

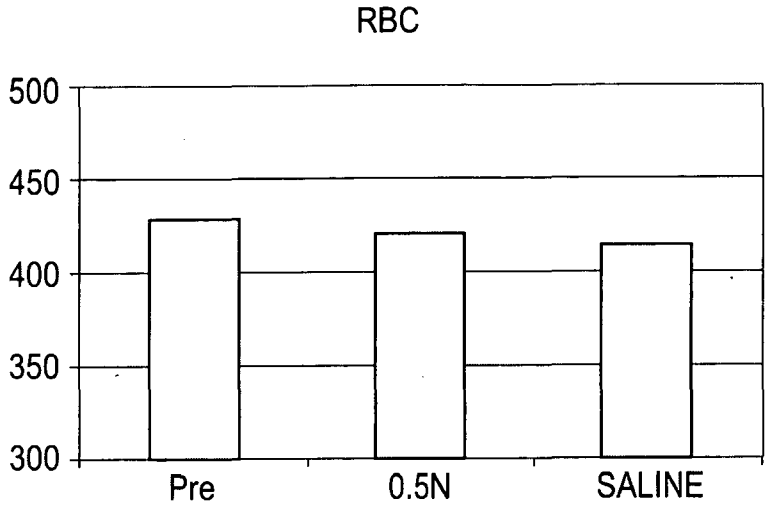

RBC
500
450
400
350
300
Pre
0.5N
SALINE

FIG. 8A

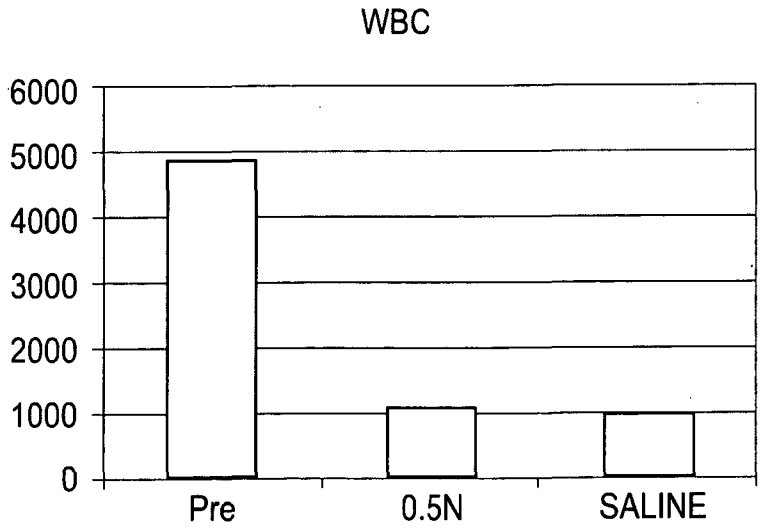

WBC
6000
5000
4000
3000
2000
1000
0
Pre
0.5N
SALINE

FIG. 8B

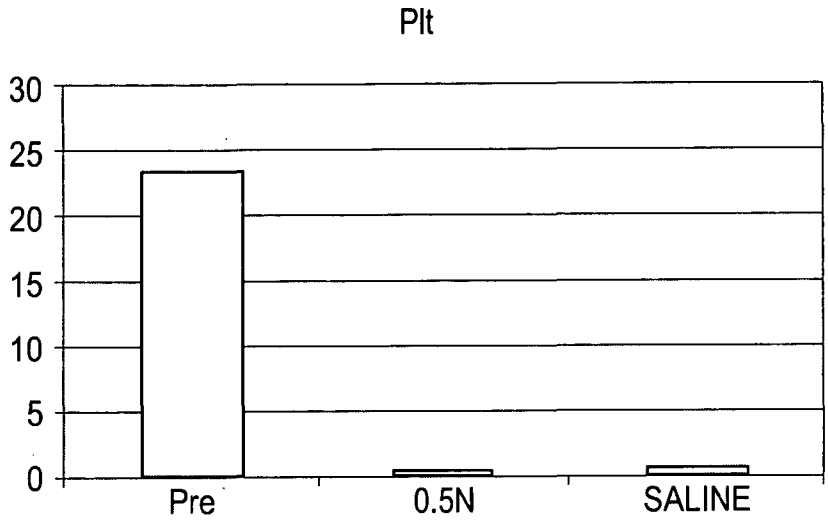

Plt
30
25
20
15
10
5
0
Pre
0.5N
SALINE

FIG. 8C

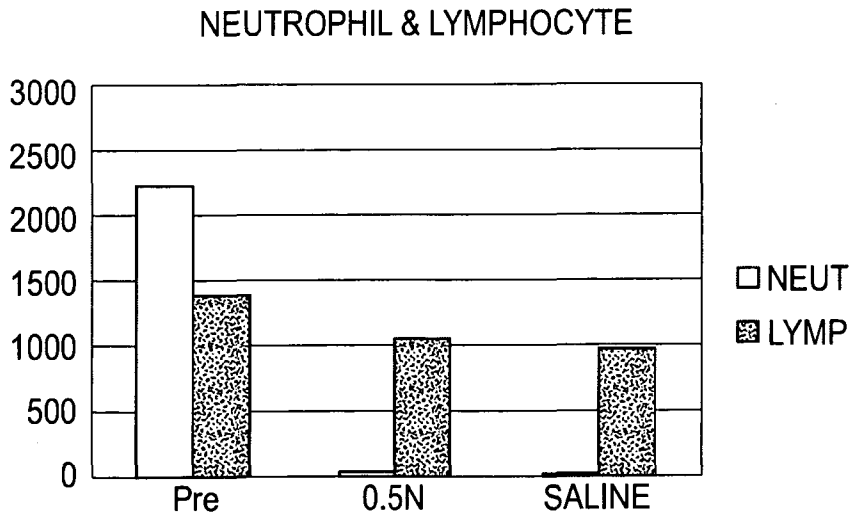

NEUTROPHIL & LYMPHOCYTE
3000
2500
2000
1500
1000
500
0
Pre
0.5N
SALINE
NEUT
LYMP

FIG. 8D

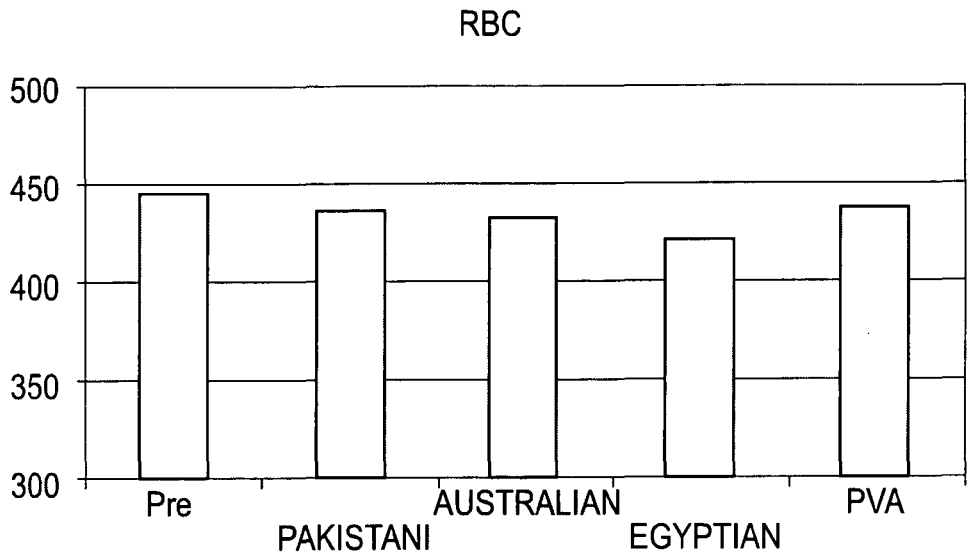

RBC
500
450
400
350
300
Pre
PAKISTANI
AUSTRALIAN
EGYPTIAN
PVA

FIG. 9A

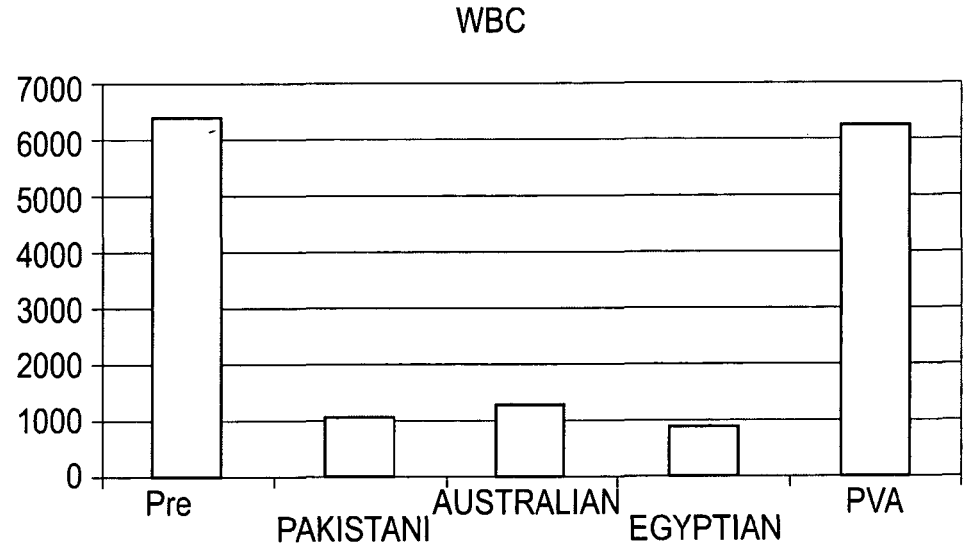

WBC
7000
6000
5000
4000
3000
2000
1000
0
Pre
PAKISTANI
AUSTRALIAN
EGYPTIAN
PVA

FIG. 9B

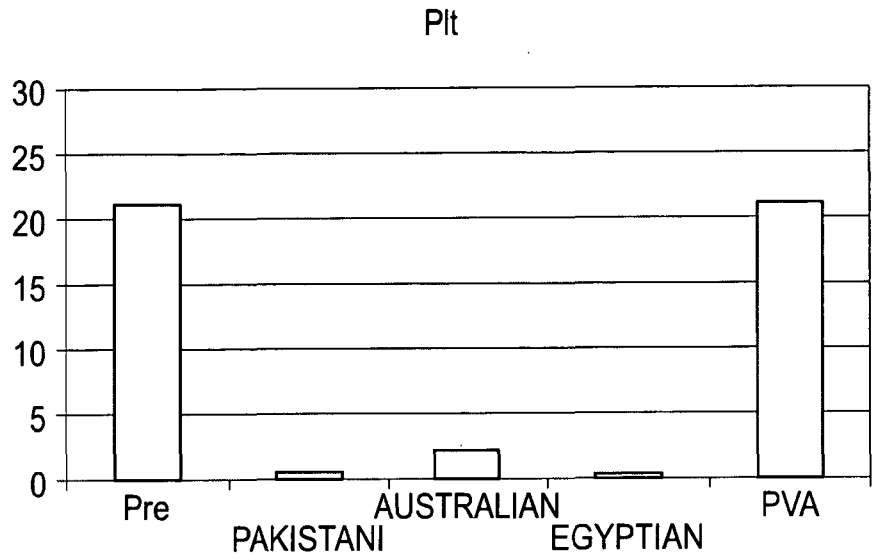

Plt
30
25
20
15
10
5
0
Pre
PAKISTANI
AUSTRALIAN
EGYPTIAN
PVA

FIG. 9C

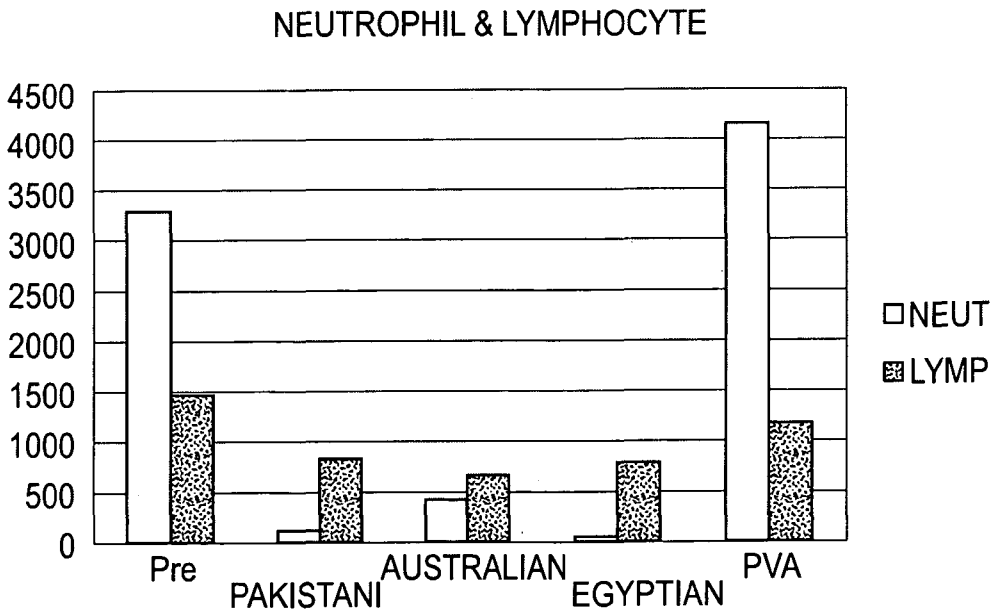

NEUTROPHIL & LYMPHOCYTE
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Pre
PAKISTANI
AUSTRALIAN
EGYPTIAN
PVA
NEUT
LYMP

FIG. 9D

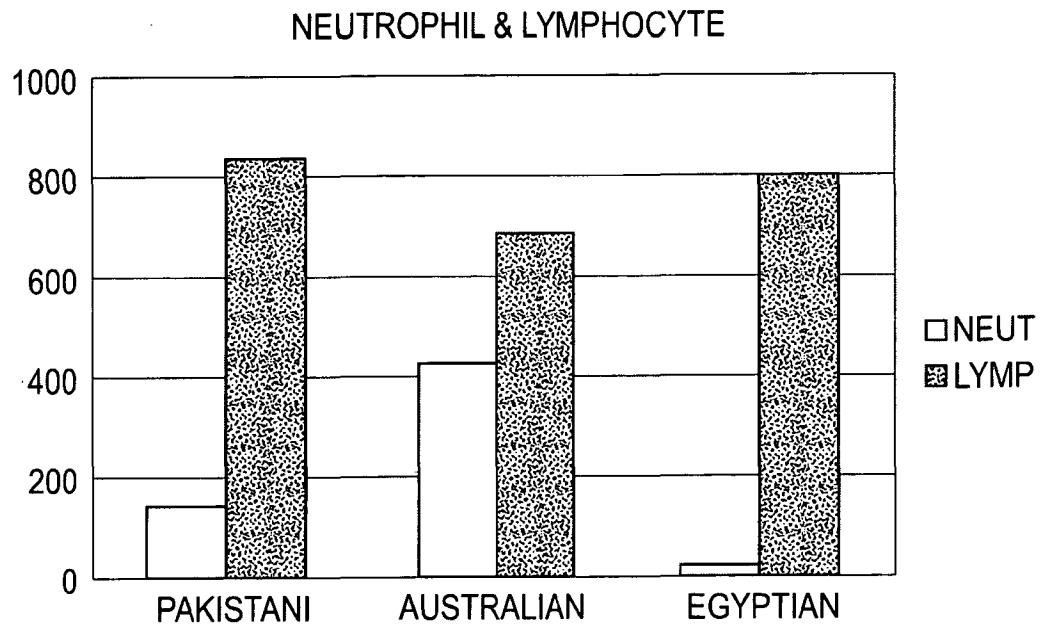

NEUTROPHIL & LYMPHOCYTE
1000
800
600
400
200
0
PAKISTANI
AUSTRALIAN
EGYPTIAN
NEUT
LYMP

FIG. 10

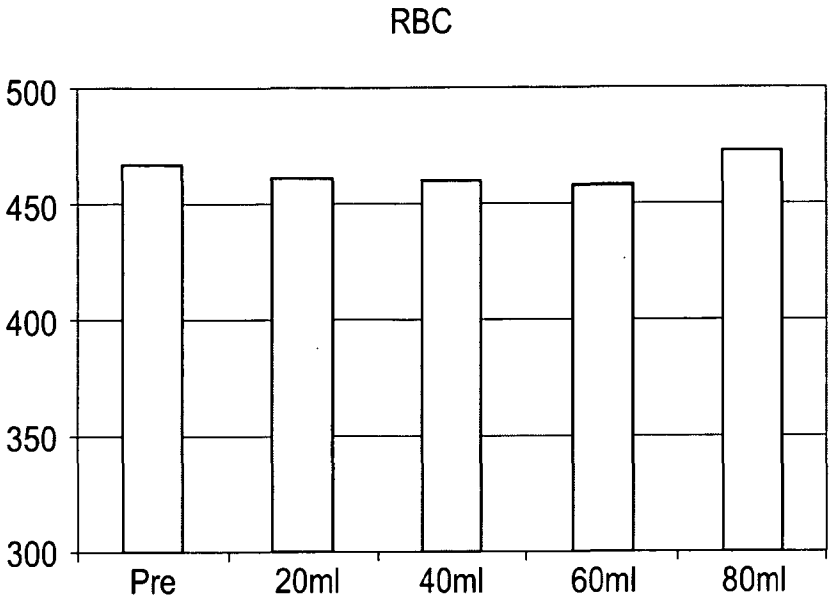


FIG. 11A

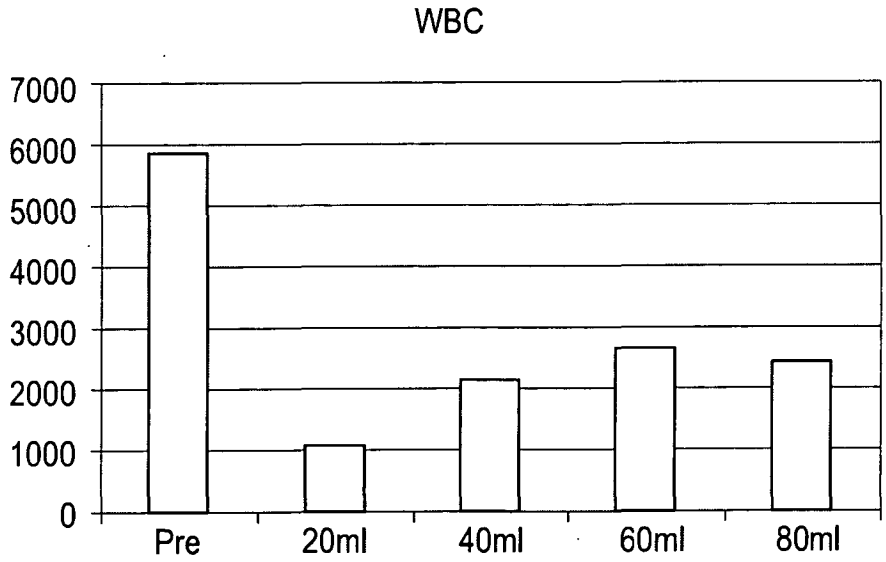


FIG. 11B

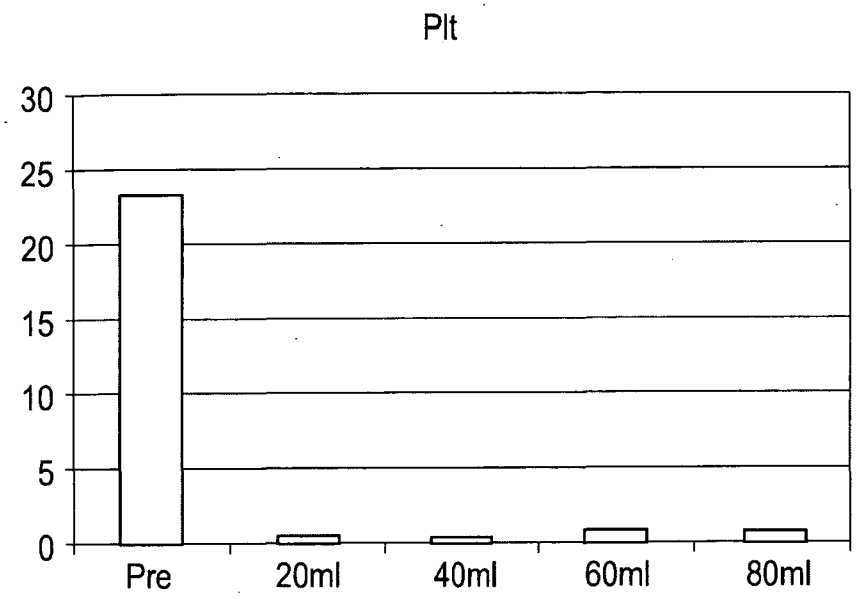


FIG. 11C

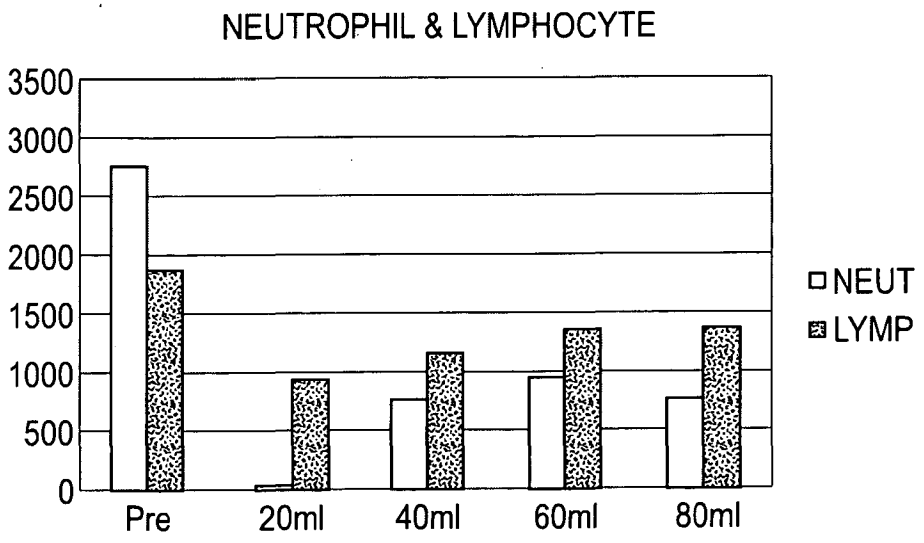


FIG. 11D

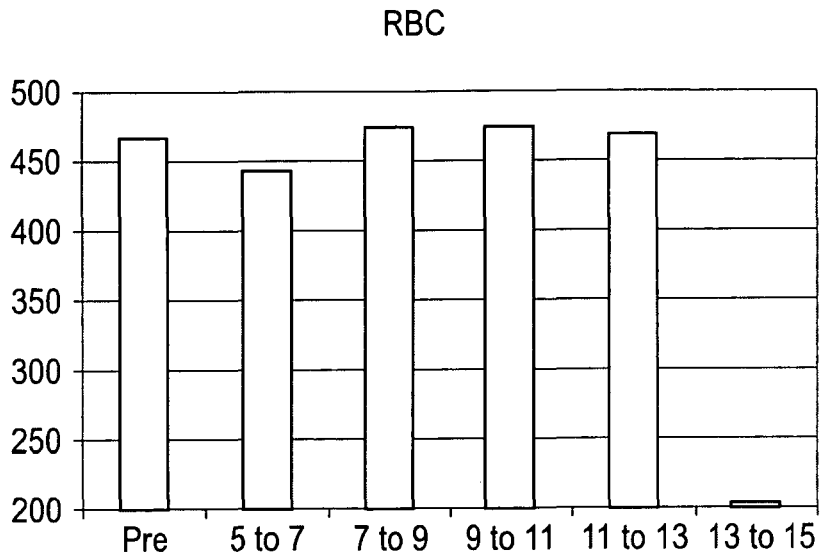


FIG. 12A

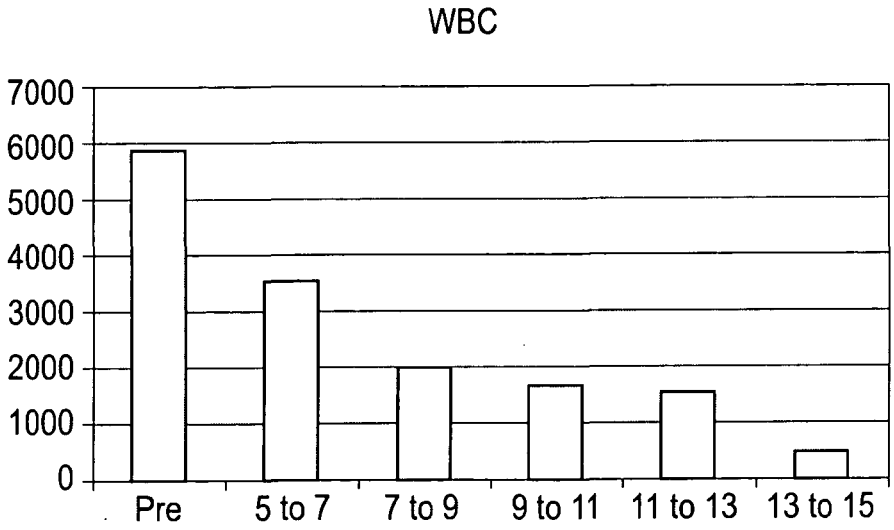


FIG. 12B

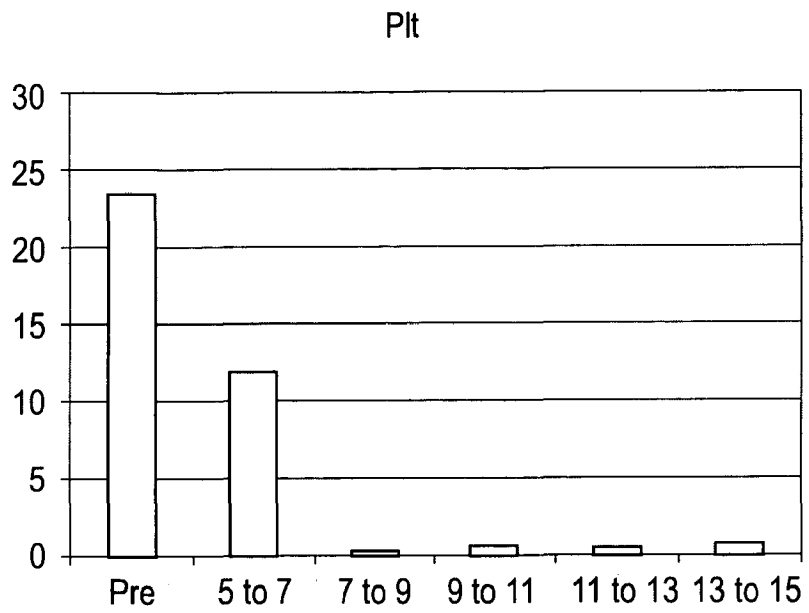


FIG. 12C

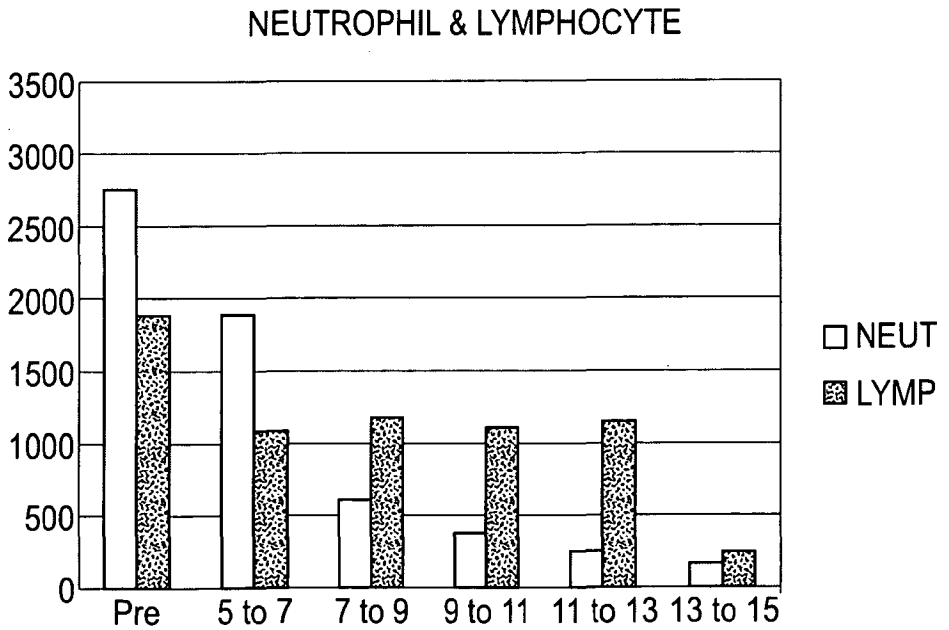


FIG. 12D

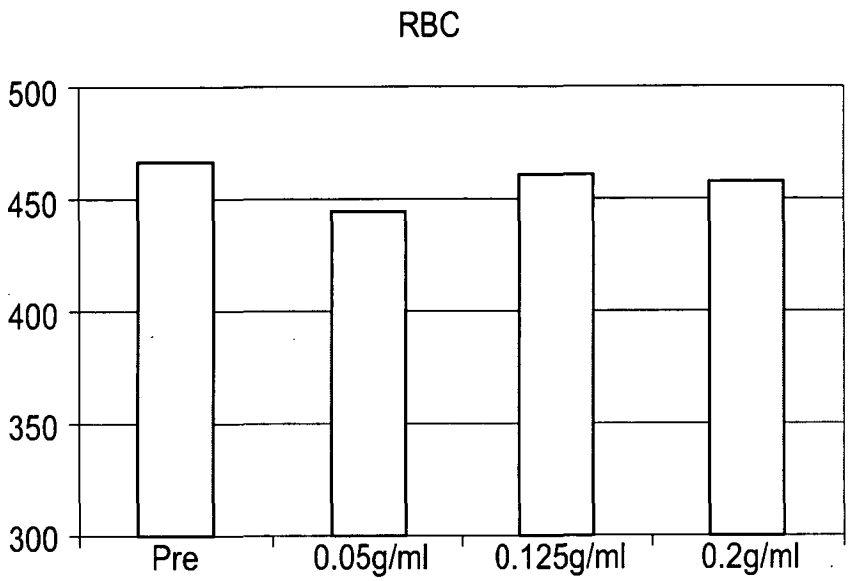


FIG. 13A

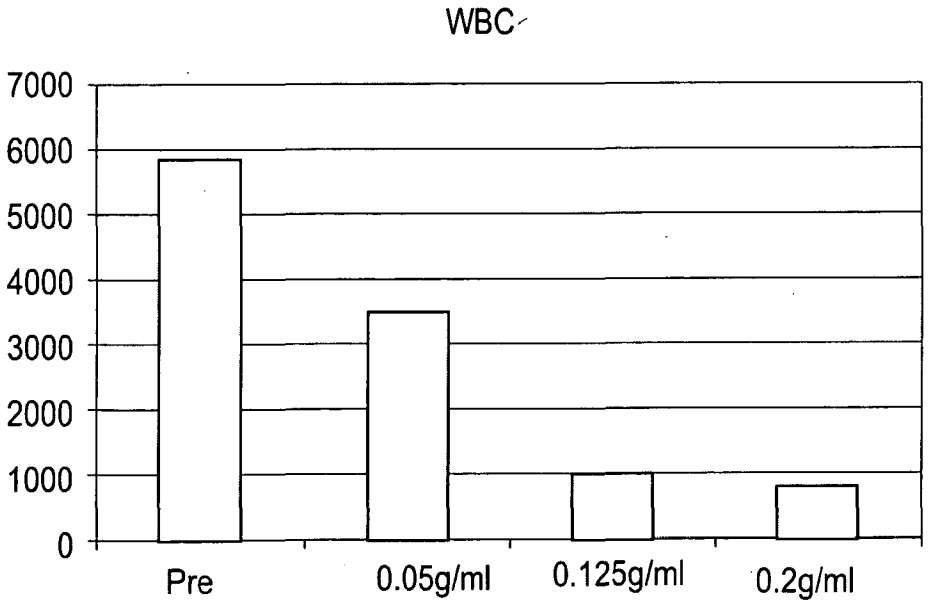


FIG. 13B

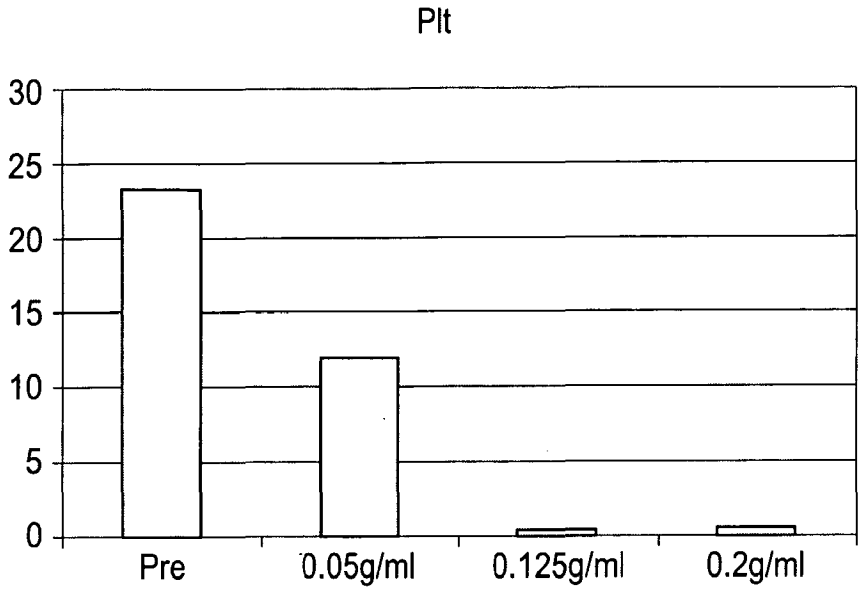


FIG. 13C

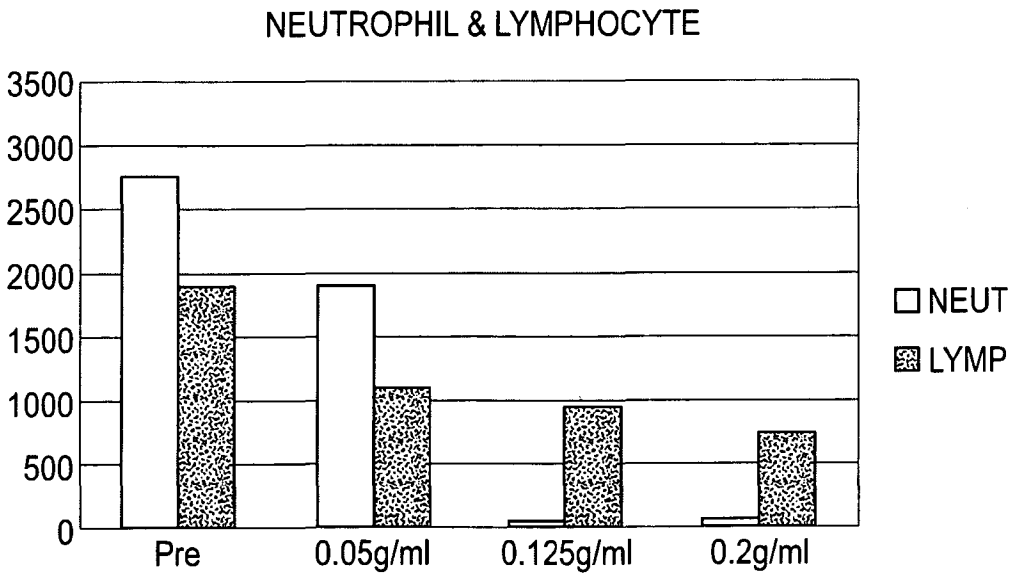


FIG. 13D

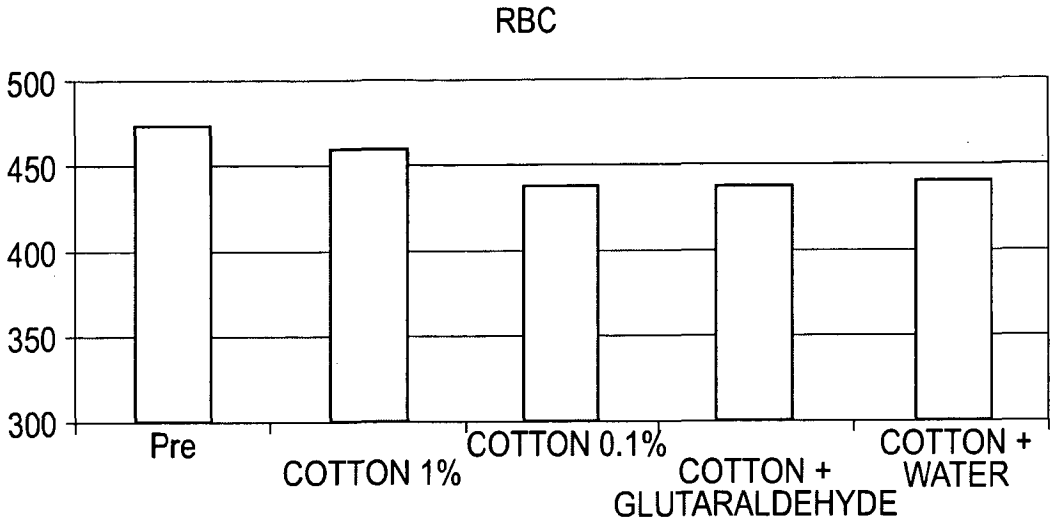


FIG. 14A

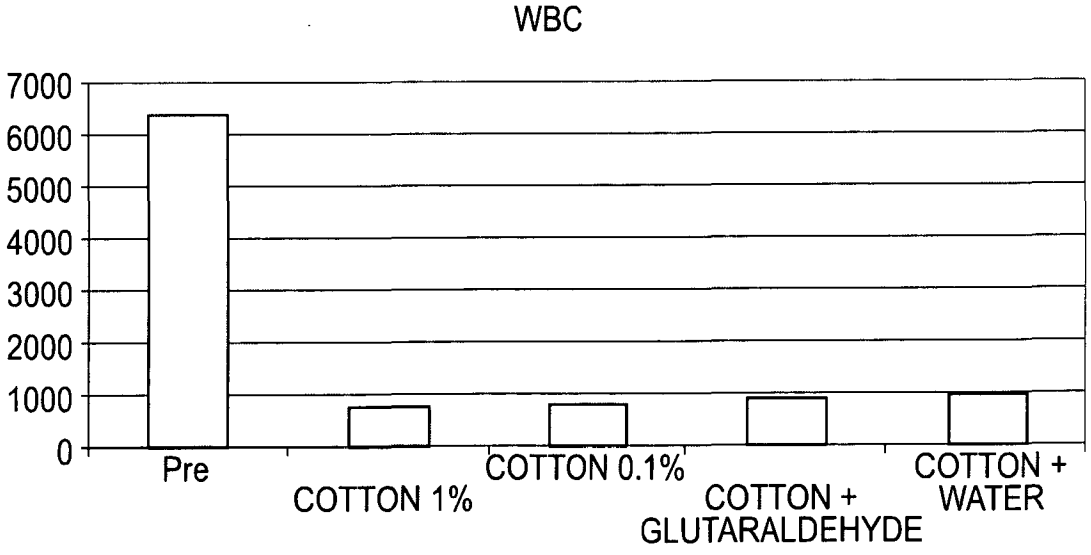


FIG. 14B

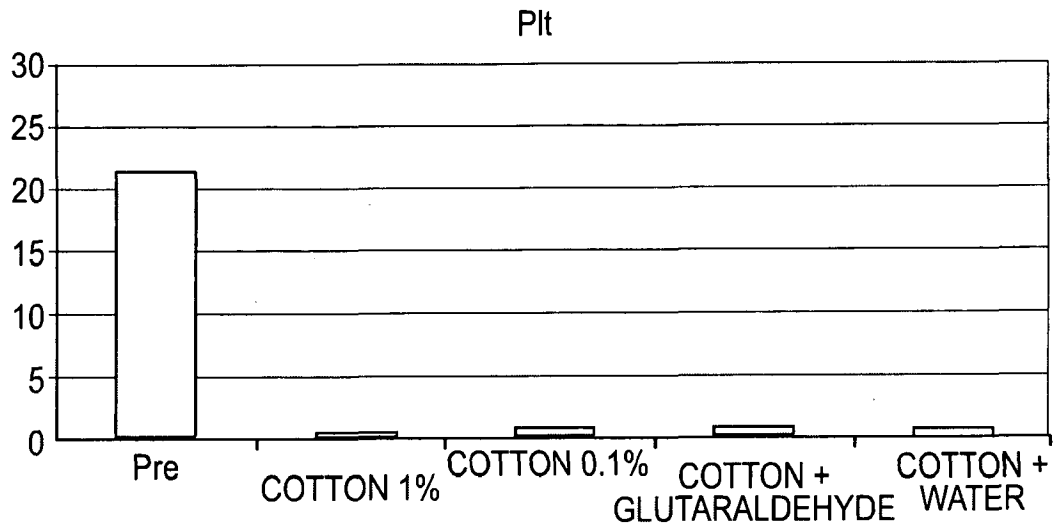


FIG. 15A

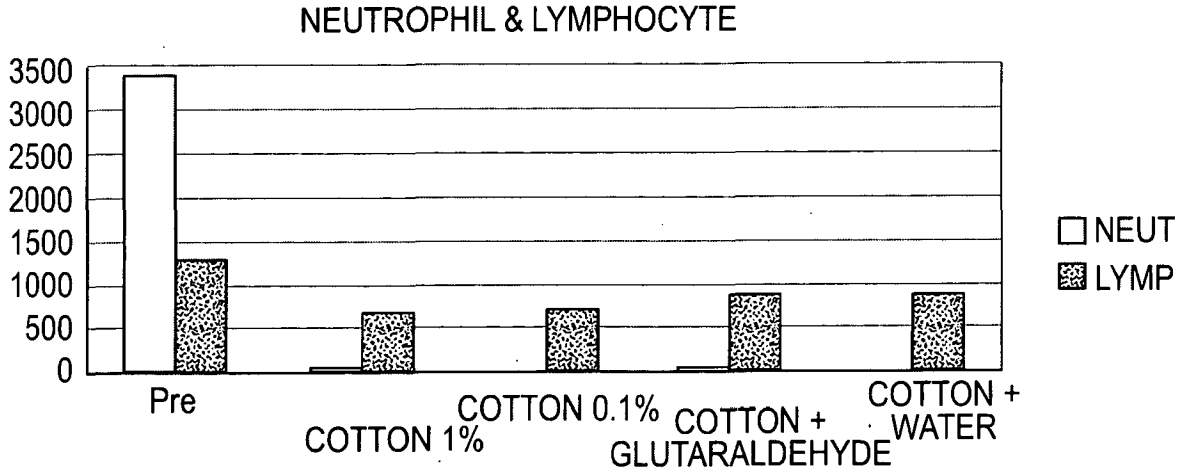


FIG. 15B

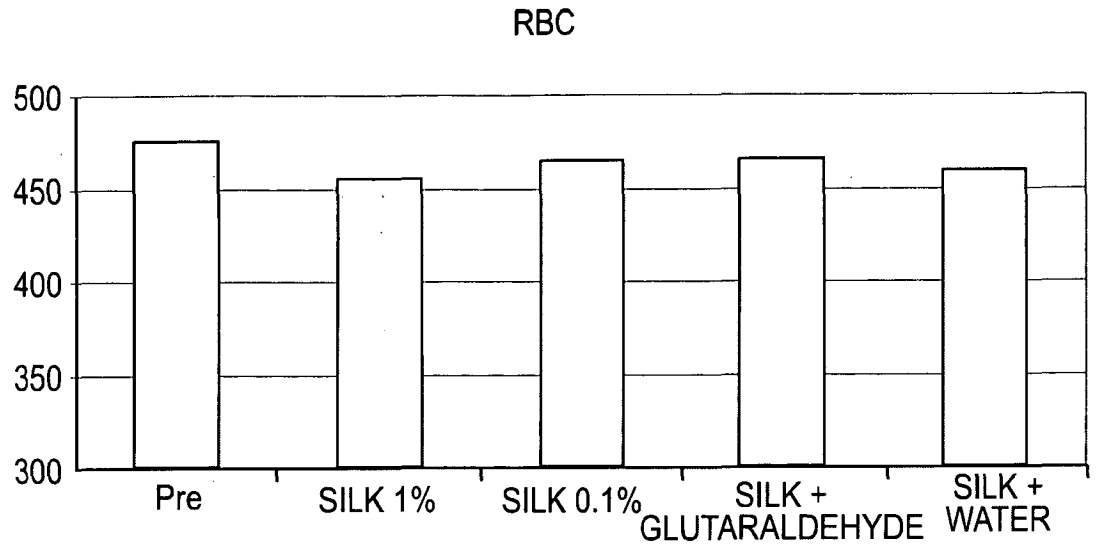


FIG. 16A

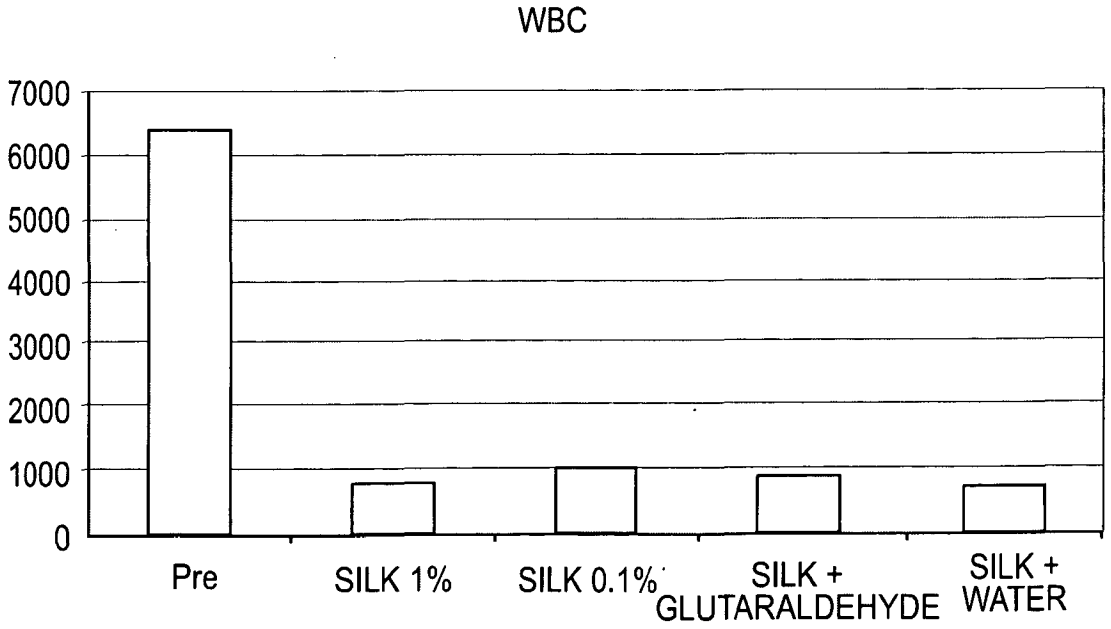


FIG. 16B

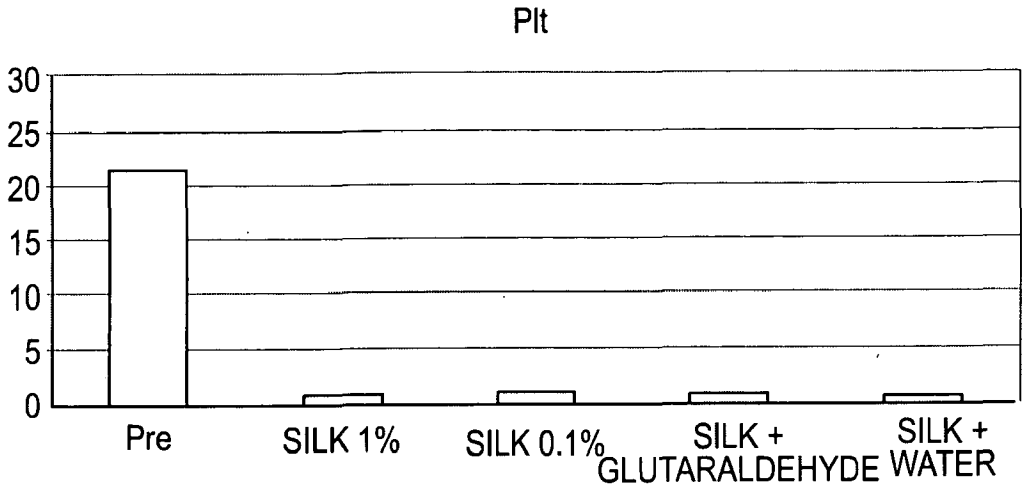


FIG. 17A

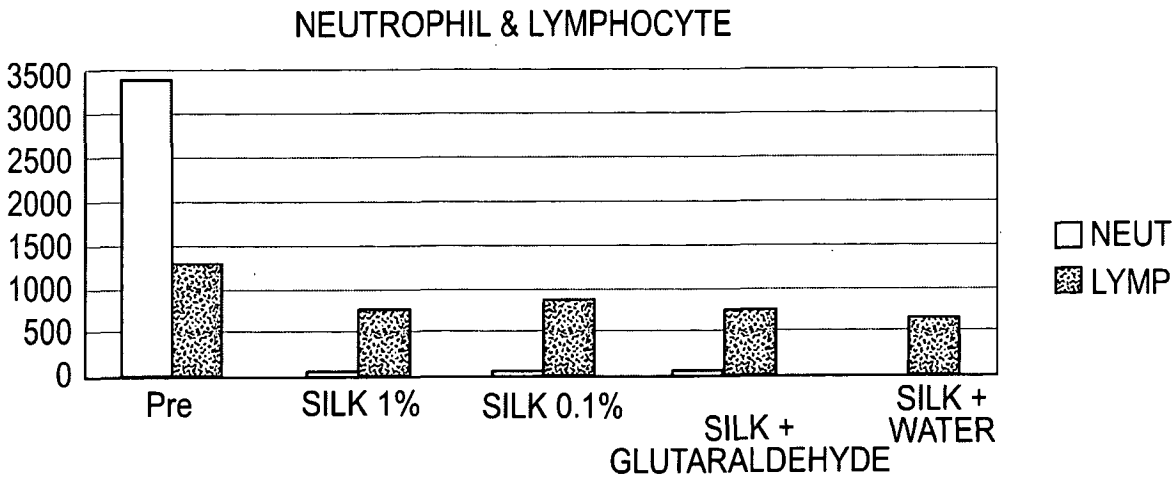


FIG. 17B

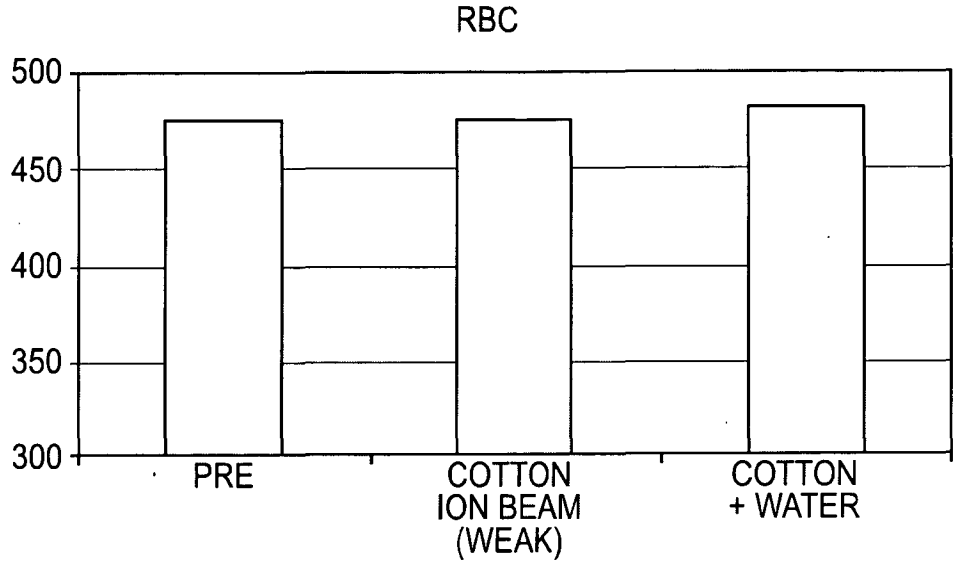


FIG. 18A

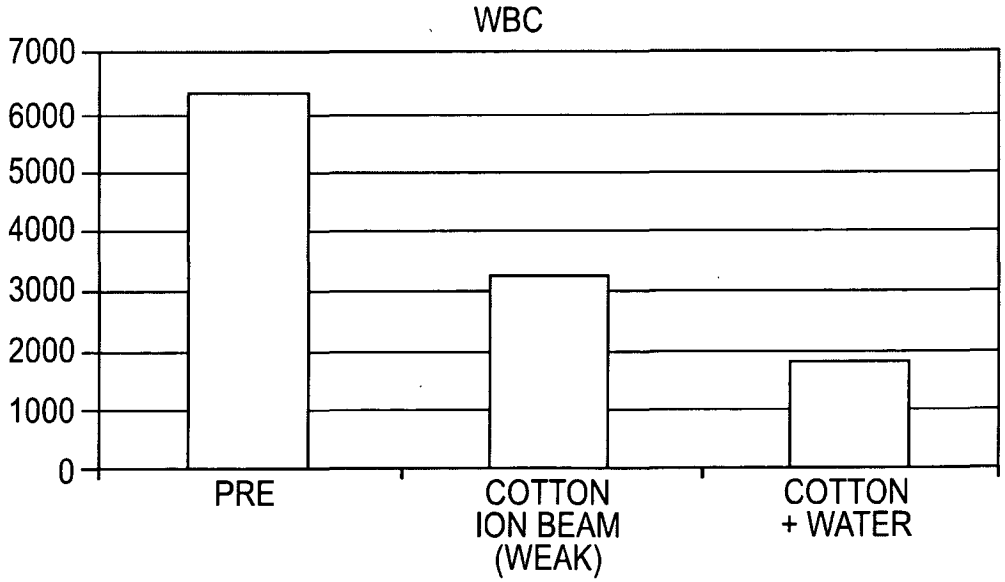


FIG. 18B

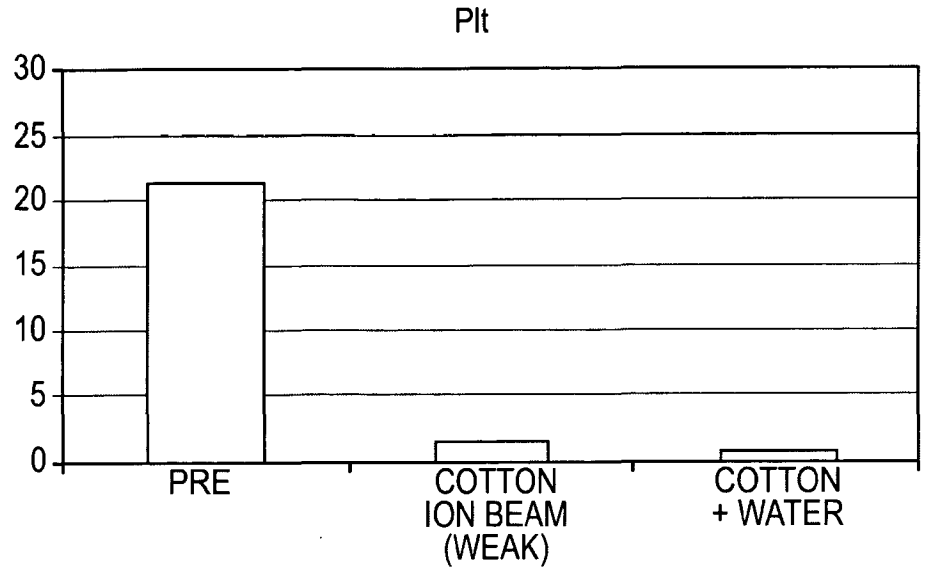


FIG. 18C

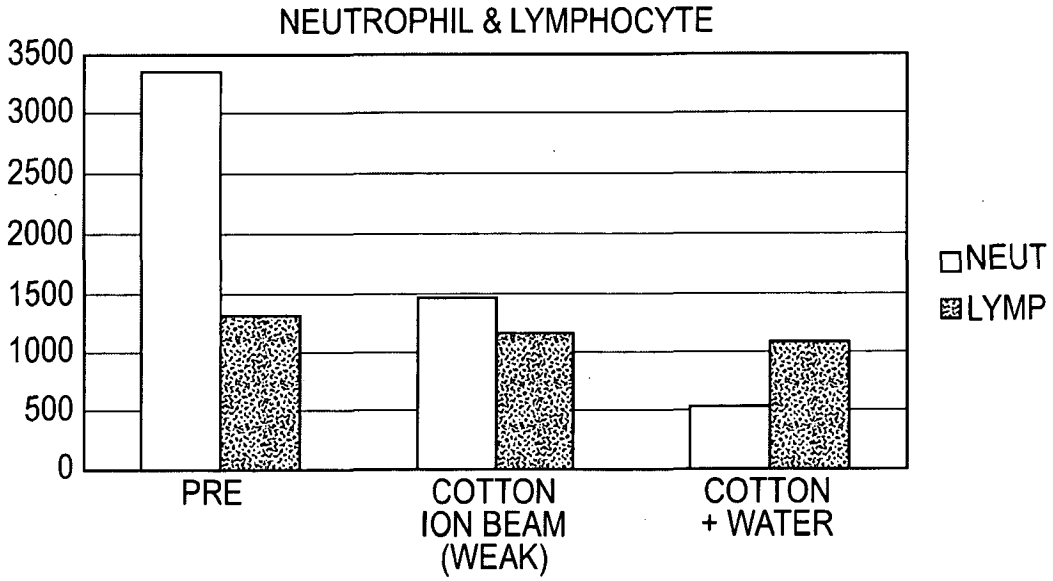


FIG. 18D

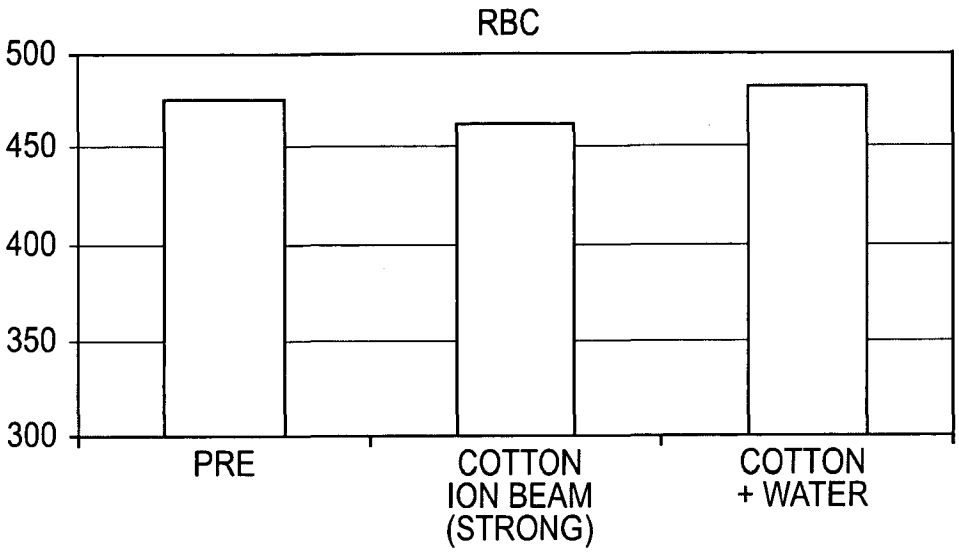


FIG. 19A

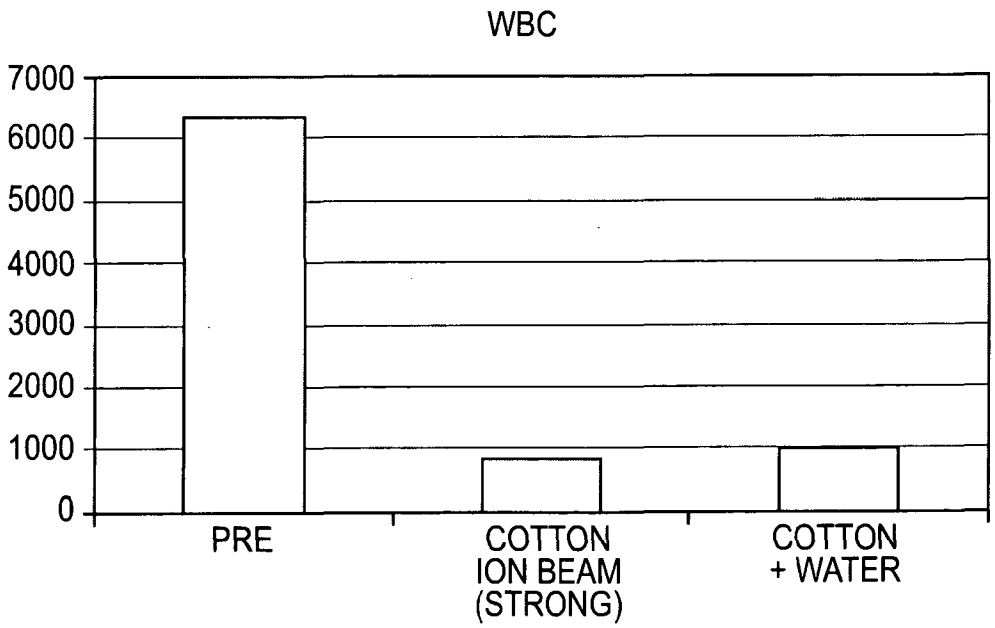


FIG. 19B

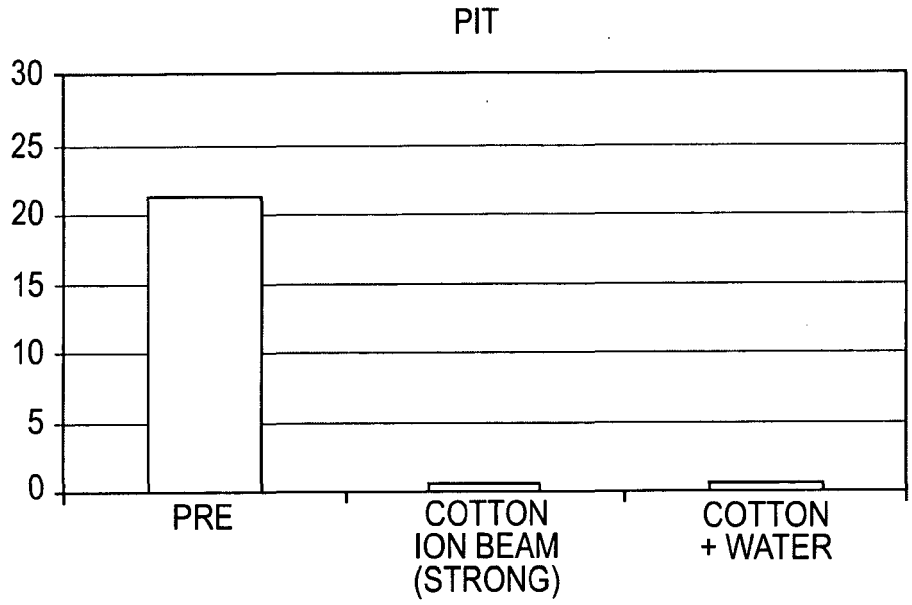


FIG. 19C

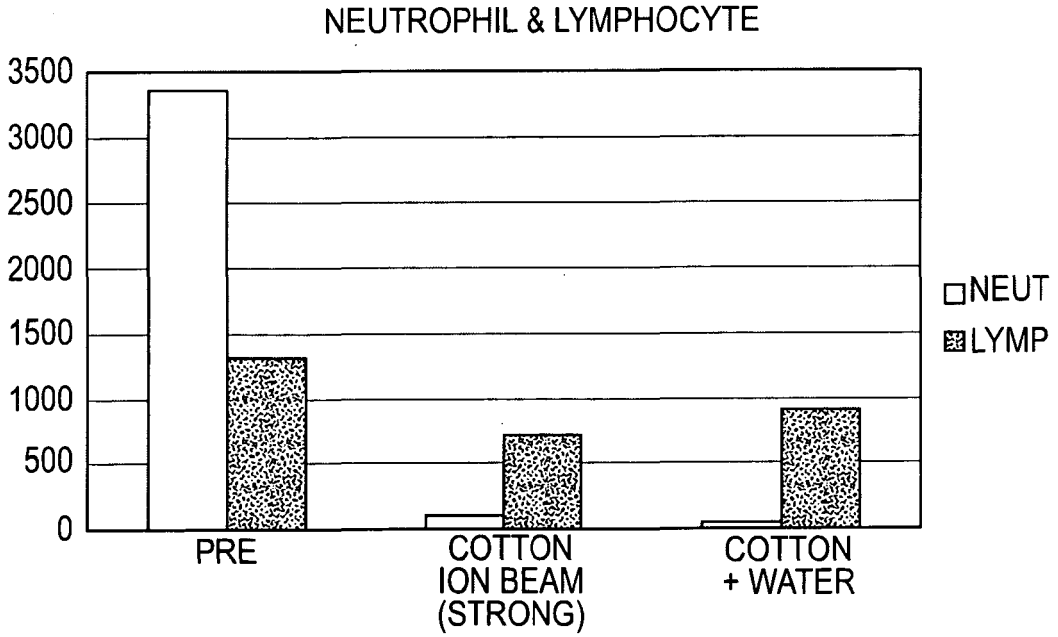


FIG. 19D

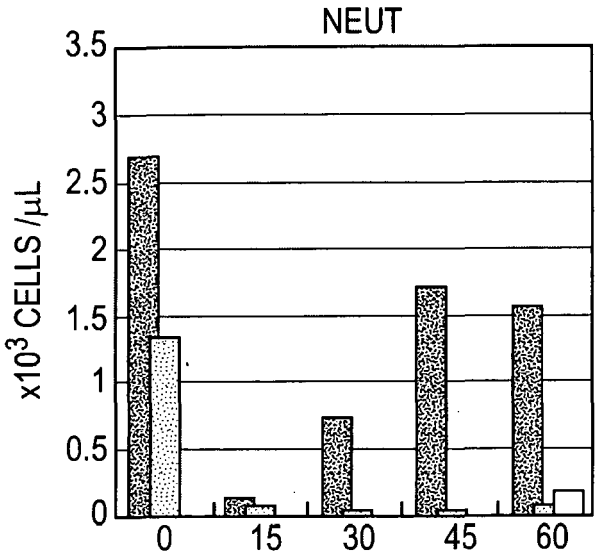


FIG. 20A

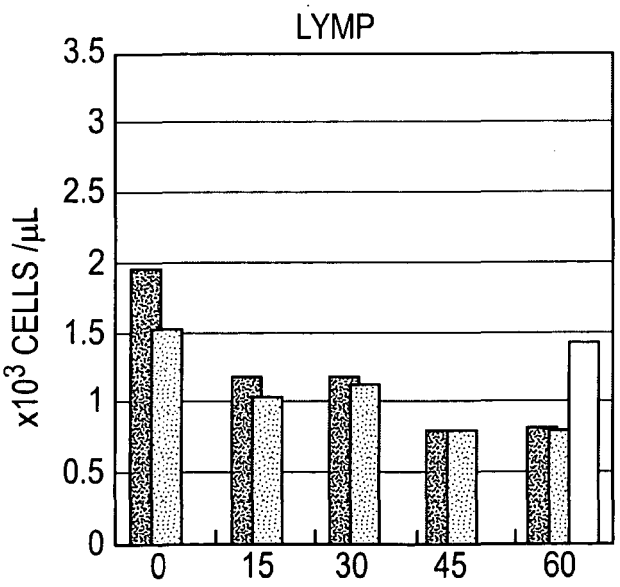


FIG. 20B

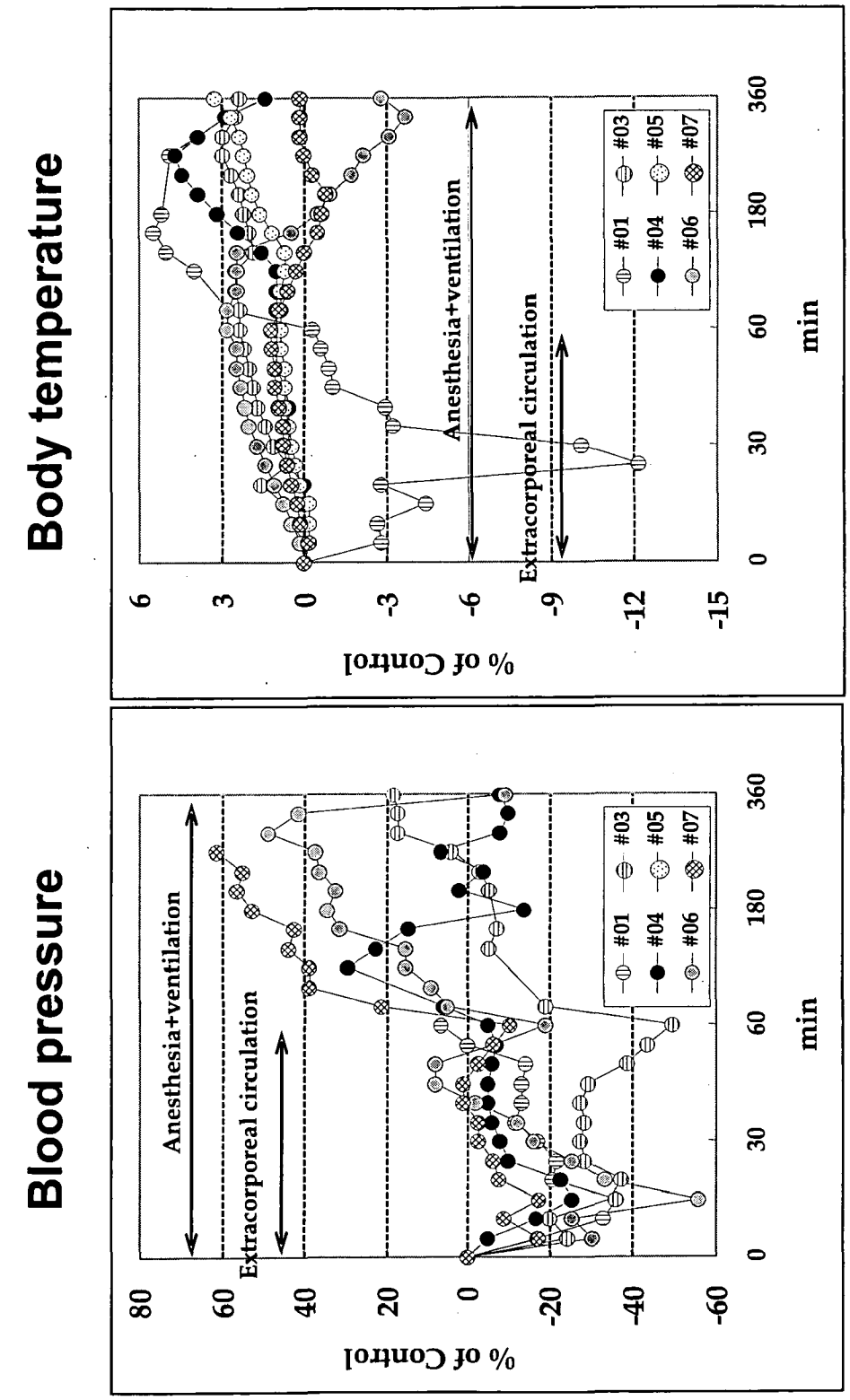

Body temperature
% of Control
6
3
0
-3
-6
-9
-12
-15
0
30
60
180
360
min
Anesthesia+ventilation
Extracorporeal circulation
#01
#03
#04
#05
#06
#07
Blood pressure
% of Control
80
60
40
20
0
-20
-40
-60
0
30
60
180
360
min
Anesthesia+ventilation
Extracorporeal circulation
#01
#03
#04
#05
#06
#07

FIG. 21

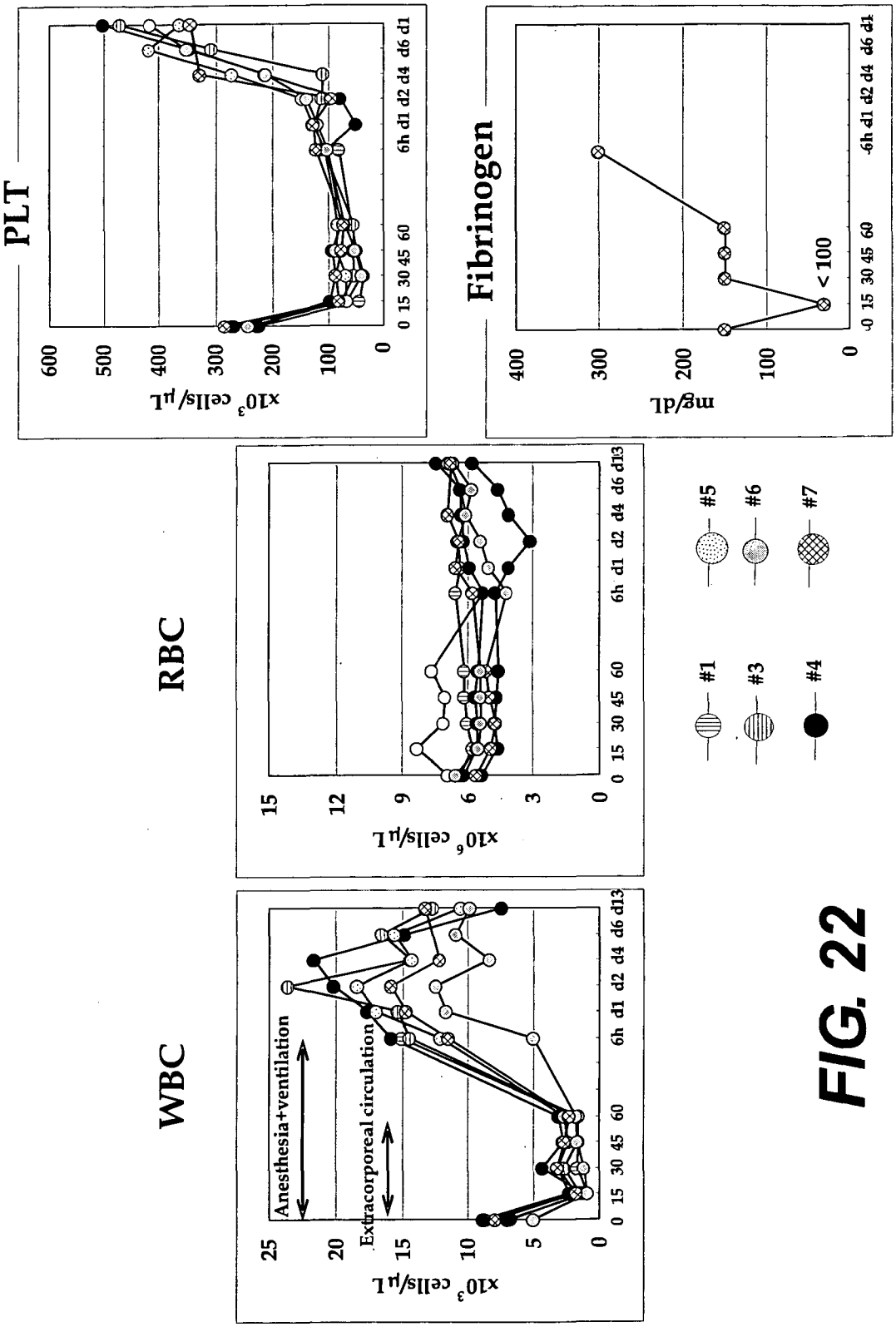

PLT
x10³ cells/μL
600
500
400
300
200
100
0
0 15 30 45 60 6h d1 d2 d4 d6 d1
Fibrinogen
mg/dL
400
300
200
100
0
< 100
-0 15 30 45 60 -6h d1 d2 d4 d6 d1
RBC
x10⁶ cells/μL
15
12
9
6
3
0
0 15 30 45 60 6h d1 d2 d4 d6 d13
WBC
x10³ cells/μL
25
20
15
10
5
0
Anesthesia+ventilation
Extracorporeal circulation
0 15 30 45 60 6h d1 d2 d4 d6 d13
#1
#3
#4
#5
#6
#7

FIG. 22

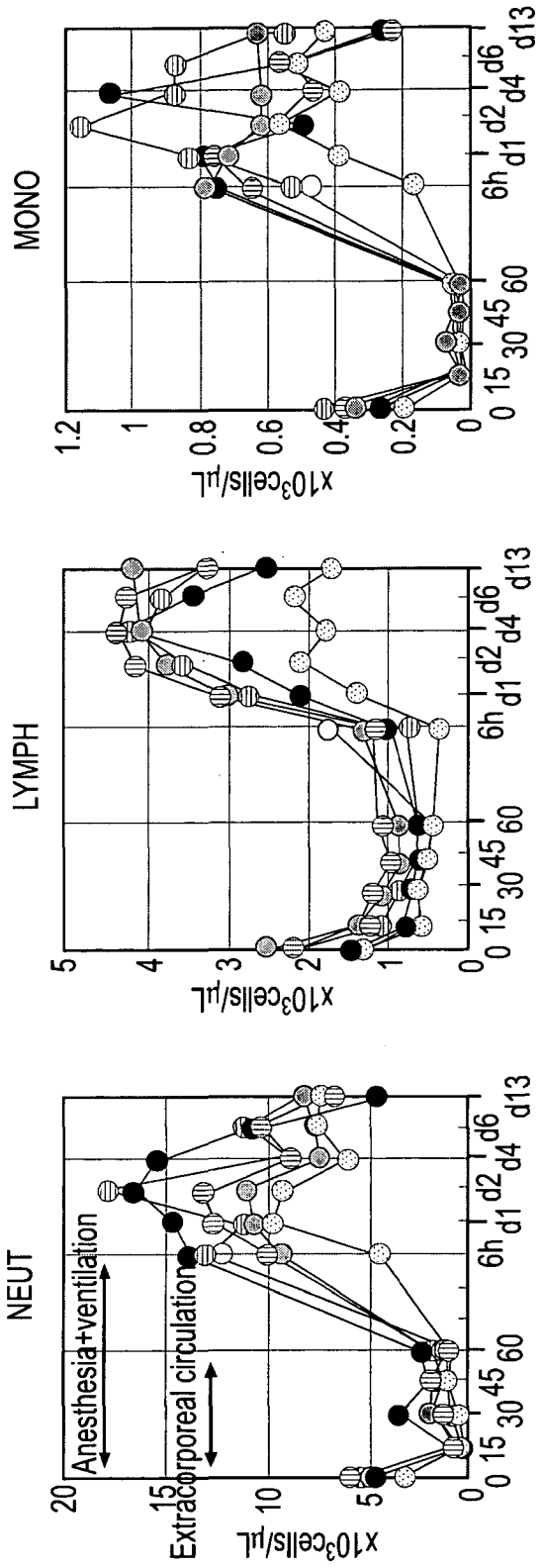


FIG. 23A

FIG. 23B

FIG. 23C

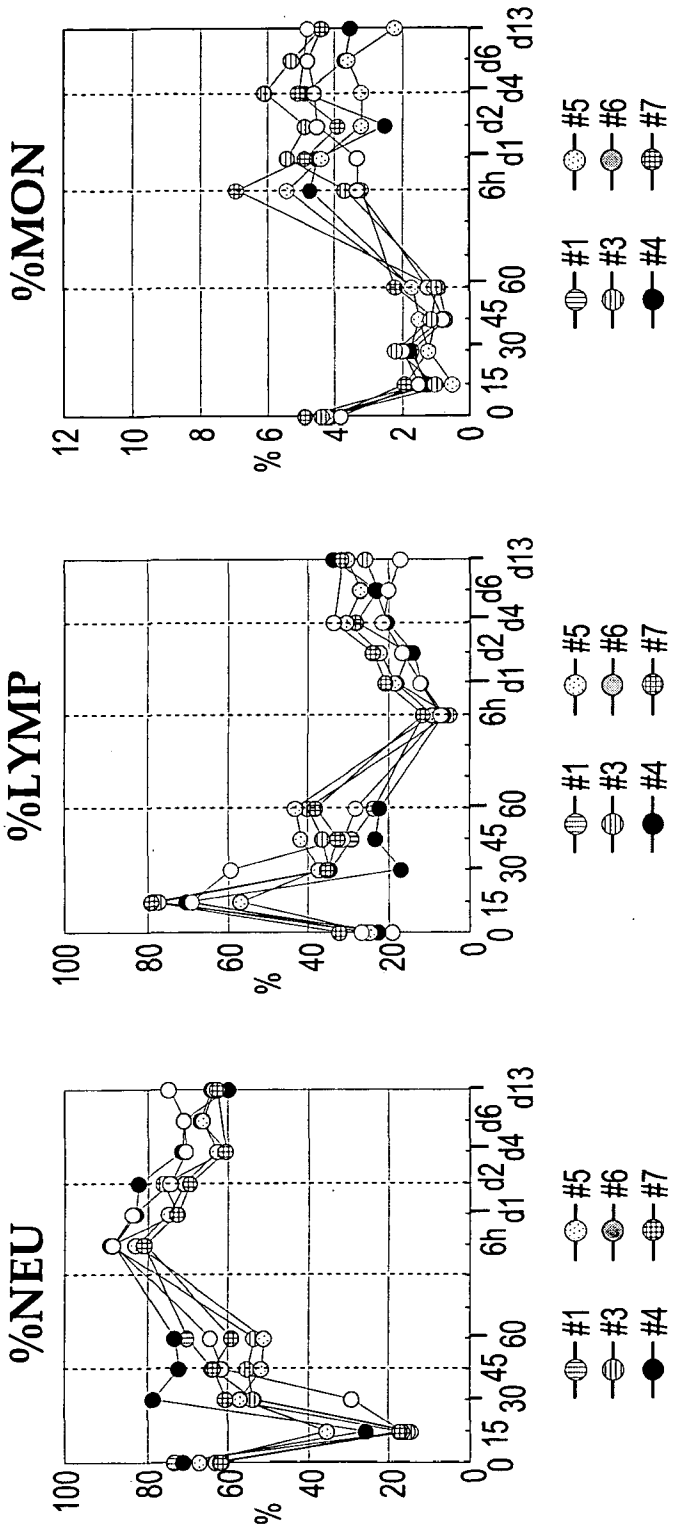


FIG. 24A

FIG. 24B

FIG. 24C

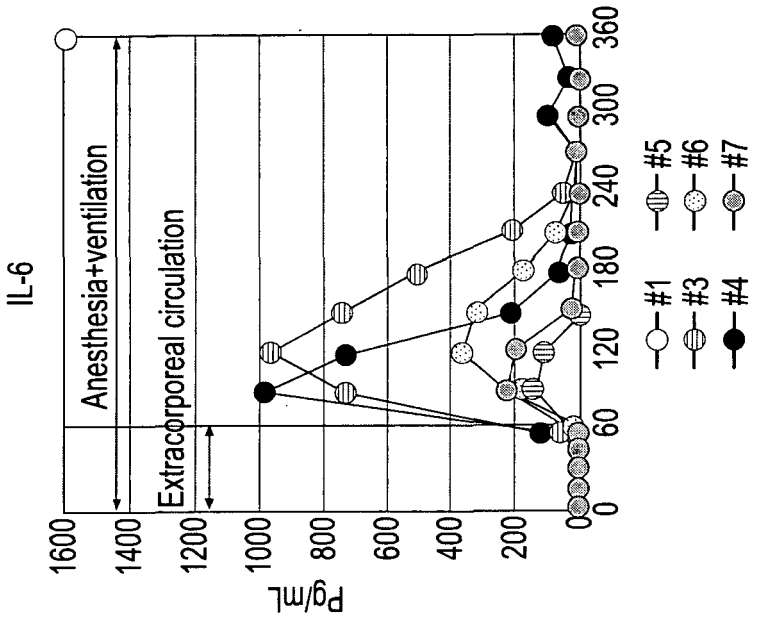


FIG. 25B

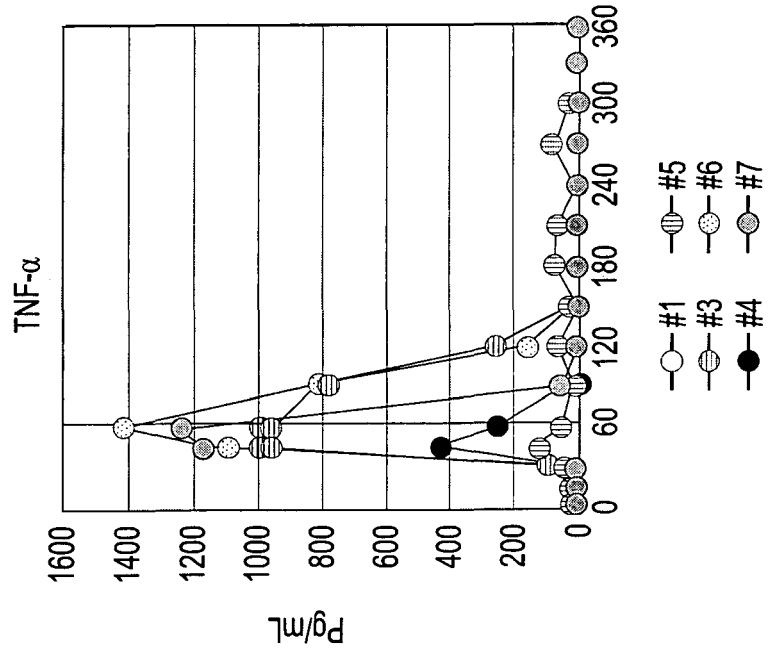


FIG. 25A

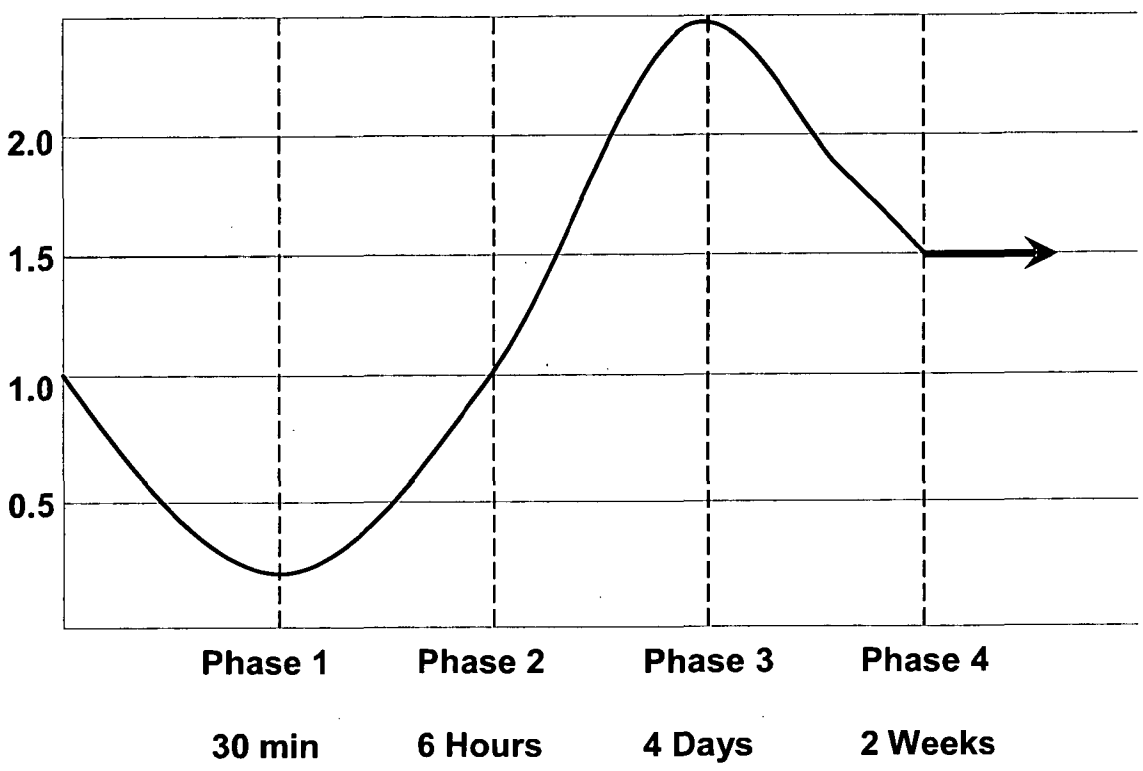

2.0
1.5
1.0
0.5
Phase 1
30 min
Phase 2
6 Hours
Phase 3
4 Days
Phase 4
2 Weeks

FIG. 26