**FIGURE 1**

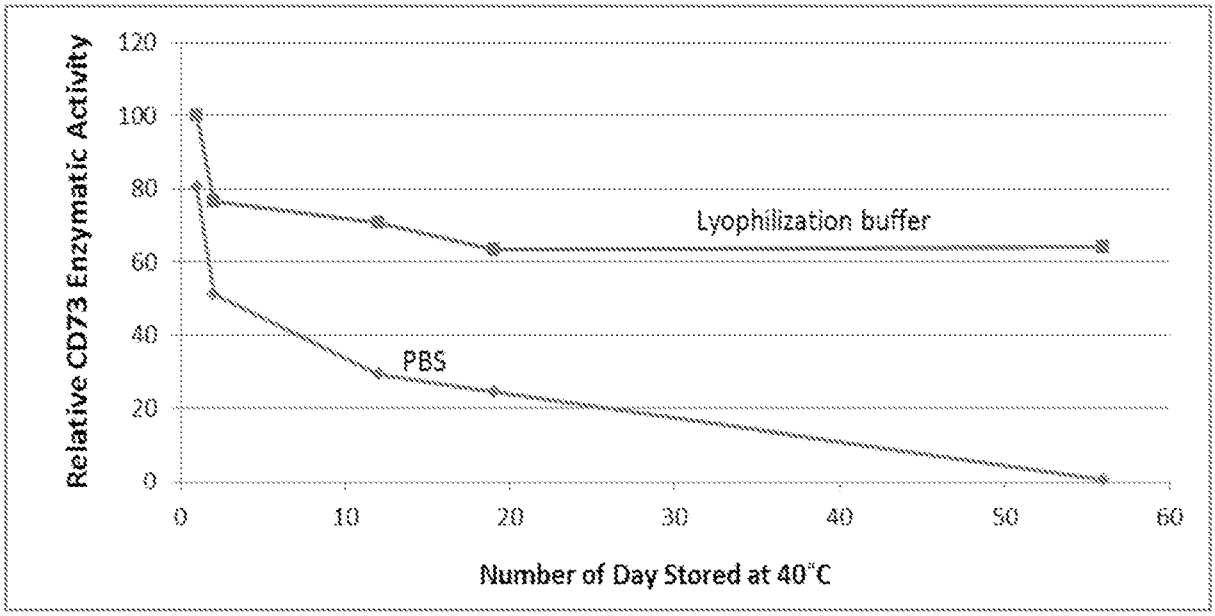

Relative CD73 Enzymatic Activity
120
100
80
60
40
20
0
0
10
20
30
40
50
60
Lyophilization buffer
PBS
Number of Day Stored at 40°C

**FIGURE 2A**

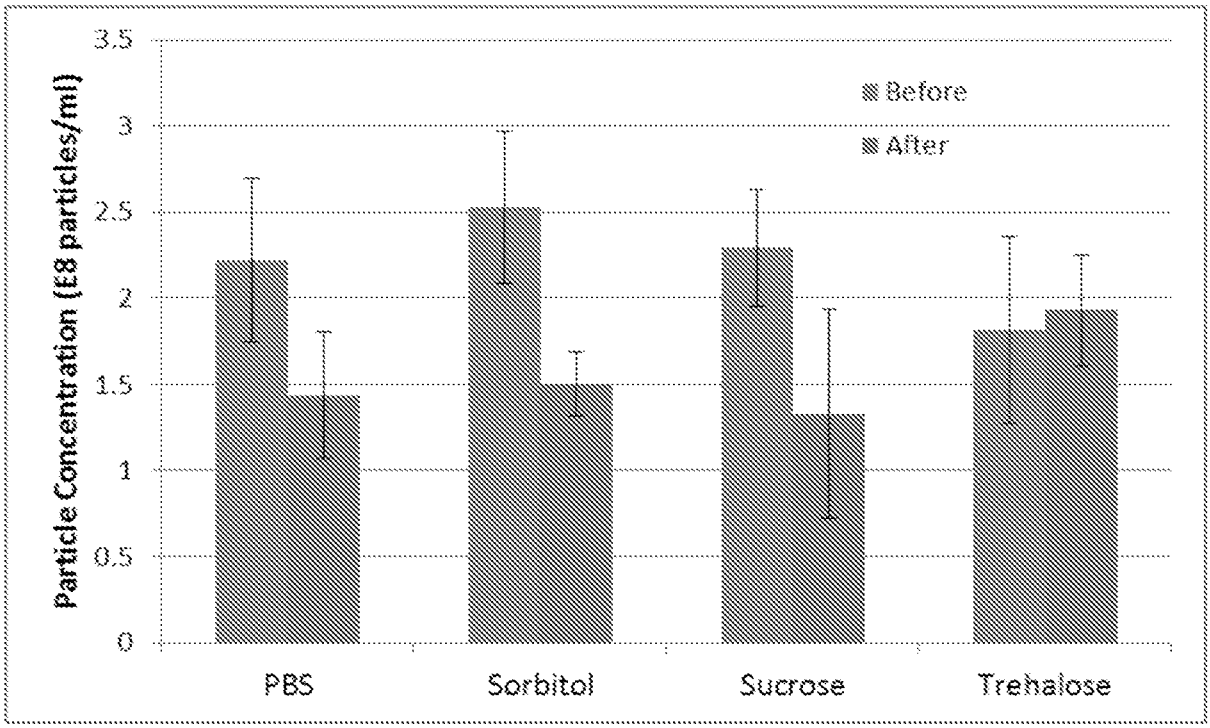

Particle Concentration (E8 particles/ml)
3.5
3
2.5
2
1.5
1
0.5
0
Before
After
PBS
Sorbitol
Sucrose
Trehalose

**FIGURE 2B**

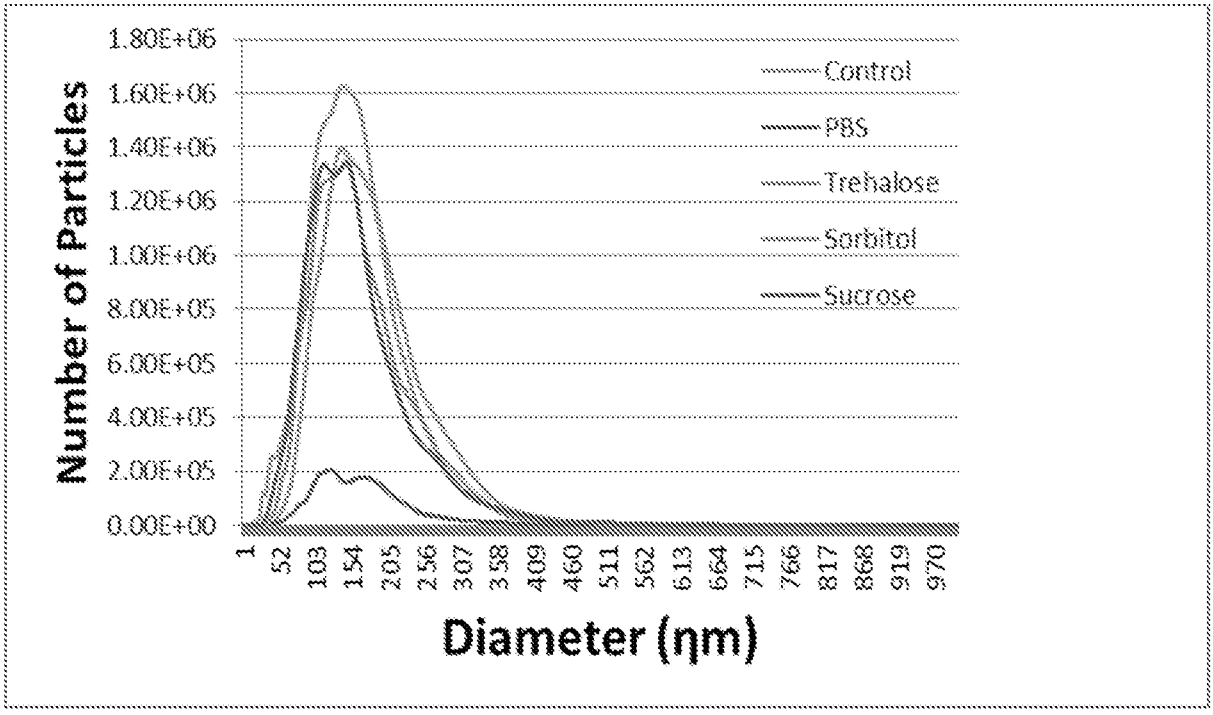

1.80E+06
1.60E+06
1.40E+06
1.20E+06
1.00E+06
8.00E+05
6.00E+05
4.00E+05
2.00E+05
0.00E+00
Number of Particles
1
52
103
154
205
256
307
358
409
460
511
562
613
664
715
766
817
868
919
970
Diameter (ηm)
Control
PBS
Trehalose
Sorbitol
Sucrose

**FIGURE 2C**

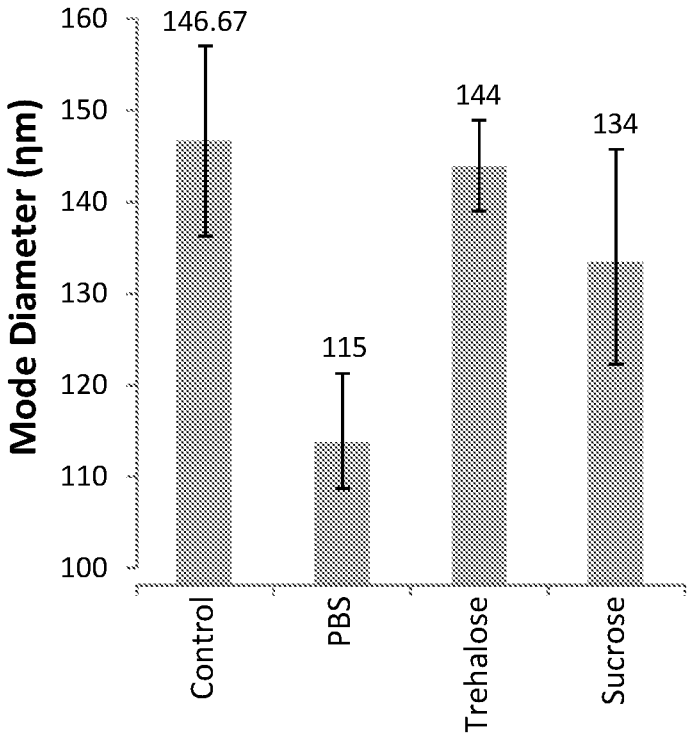

Mode Diameter (ηm)
160
150
140
130
120
110
100
146.67
115
144
134
Control
PBS
Trehalose
Sucrose

**FIGURE 3**

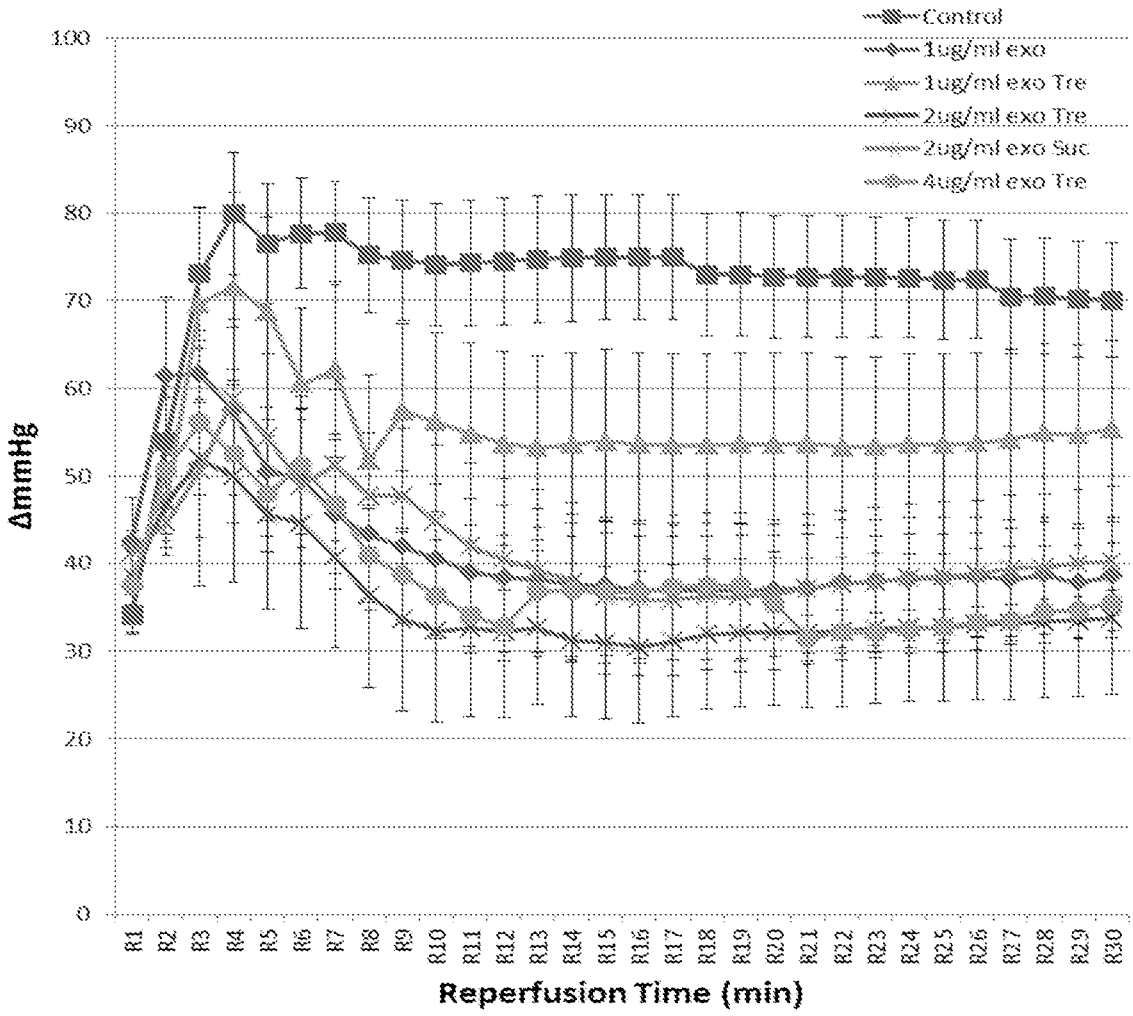

Control
1ug/ml exo
1ug/ml exo Tre
2ug/ml exo Tre
2ug/ml exo Suc
4ug/ml exo Tre
100
90
80
70
60
50
40
30
20
10
0
ΔmmHg
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
Reperfusion Time (min)

**FIGURE 4**

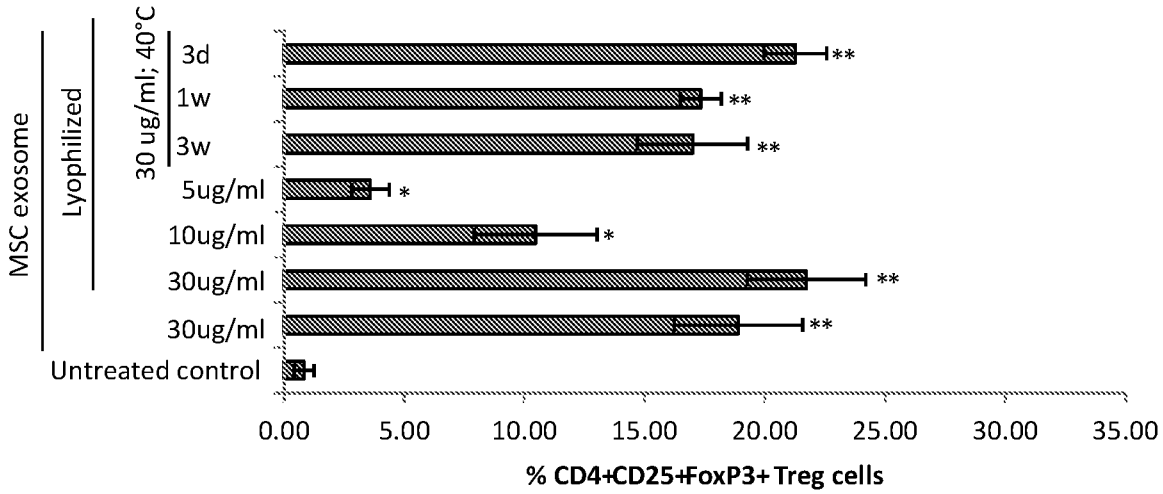
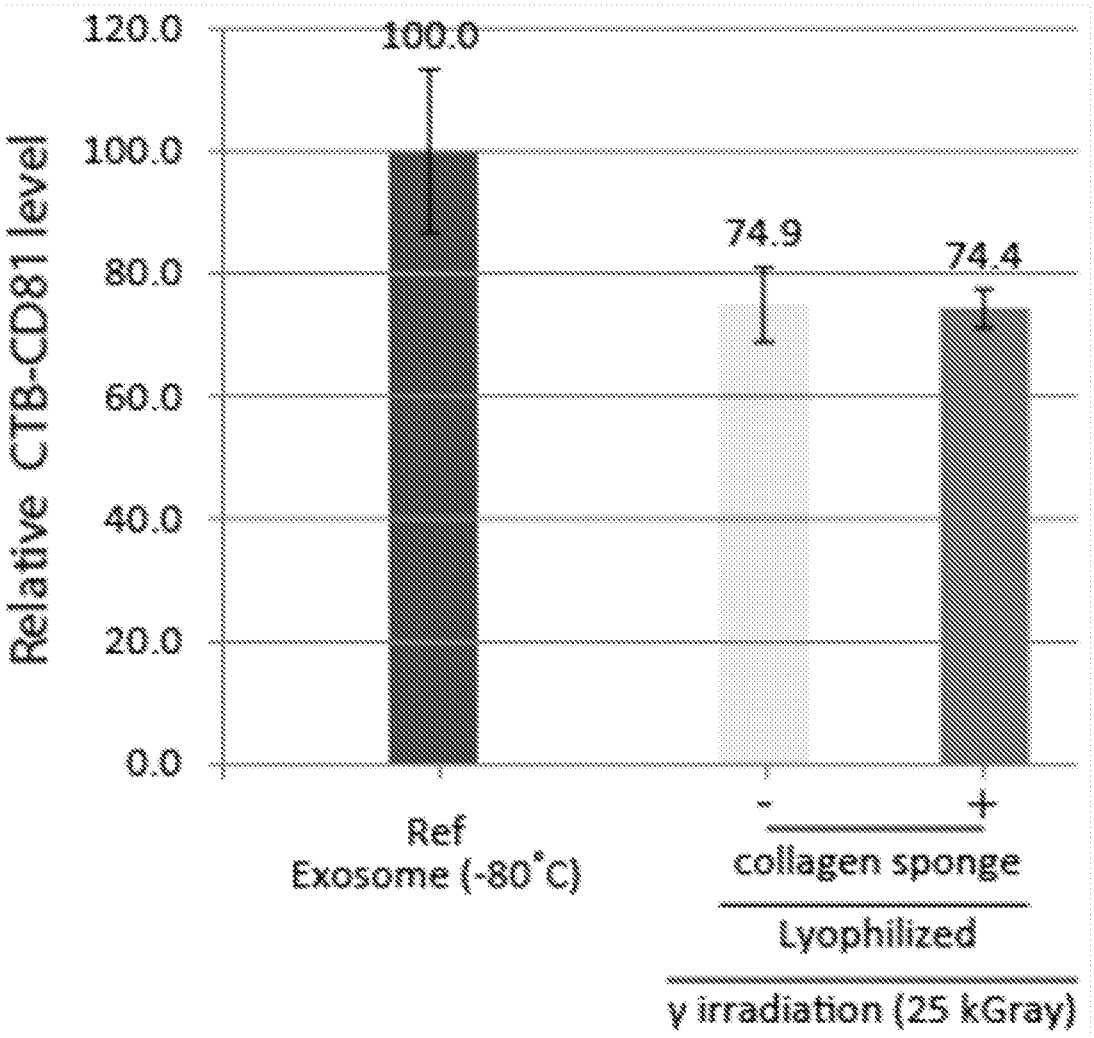

MSC exosome
Lyophilized
30 ug/ml; 40°C
3d
1w
3w
5ug/ml
10ug/ml
30ug/ml
30ug/ml
Untreated control
**
**
**
*
*
**
**
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
% CD4+CD25+FoxP3+ Treg cells

**FIGURE 5**


Relative CTB-CD81 level
120.0
100.0
80.0
60.0
40.0
20.0
0.0
100.0
74.9
74.4
Ref
Exosome (-80°C)
-
+
collagen sponge
Lyophilized
γ irradiation (25 kGray)